SEMICONDUCTOR GENERAL CATALOG

Diodes

Rectifiers
Variable Capacitance Diodes
Radio-Frequency Switching Diodes
Zener Diodes
Switching Diodes
Schottky Barrier Diodes
Photodiodes

2010/8 SCE0004J

Rectifiers

General-Purpose Rectifiers

Average Forward Current (A)	Package	Peak Repetitive Reverse Voltage (V)				Remarks
		100	400	600	800	
0.3	VS-6		TPC6K01			Independent 2-in-1
0.5	HM-FLAT		HMG01			Independent 2-in-1
0.7	S-FLAT	**CRG01**	**CRG02** **CRG07** ○			
1	S-FLAT		**CRG03** **CRG09** ◆	**CRG04**	**CRG05**	
	M-FLAT		**CMG05** **CMG07**	**CMG06** **CMG08**		
2.0	M-FLAT		**CMG02**	**CMG03**		

○: The definitions of the absolute maximum junction and storage temperatures are based on AEC-Q101

◆: High ESD immunity

- The products shown in bold are also manufactured in offshore fabs.
- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

(For Strobe Discharge Circuits)

Peak Repetitive Surge Current	Peak Repetitive Reverse Current	Part Number	Package	Remarks
I_{FRM} (A)	V_{RRM} (V)			
150	400	**CMC02**	M-FLAT	$C_M = 500\ \mu F$

- The products shown in bold are also manufactured in offshore fabs.
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Super-Fast-Recovery Diodes (S-FRDs)

Average Forward Current (A)	Package	Reverse Recovery Time trr (ns) (Max)	Peak Repetitive Reverse Voltage (V)				
			400	600	800	900	1000
0.5	S-FLAT	100			**CRF02**		
	M-FLAT				**CMF04**	**CMF03**	**CMF05** ☆
0.7	S-FLAT			**CRF03**			
1	M-FLAT			**CMF02**			
2.0	M-FLAT			**CMF01**			

☆: Dry-packed

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High-Efficiency Diodes (HEDs)

			Package	Reverse Recovery Time trr (ns) (Max)	Peak Repetitive Reverse Voltage (V)			
					200	300	400	600
Single	Average Forward Currents (A)	0.5	S-FLAT	35	**CRH02**			
		1	S-FLAT		**CRH01**			
			M-FLAT		**CMH04**		**CMH05A**	
				50			**CMH05**	
		2	M-FLAT	35	**CMH07**		**CMH08A**	
				50			**CMH08**	
		3		35	**CMH01**		**CMH02A**	
				50			**CMH02**	
			L-FLAT	35	CLH01	CLH02 ☆	CLH03 ☆	
		5			CLH05	CLH06 ☆	CLH07 ☆	

☆: Dry-packed

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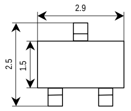
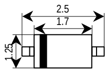
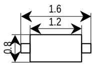
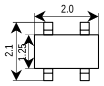
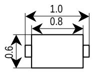
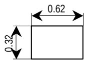
Variable Capacitance Diodes

Variable Capacitance Diodes (Diodes for Electronic Tuning)

Part Number						
Package						
S-MINI 	V_R (V)	C_T (pF)	V_R (V)	C_T (pF)	V_R (V)	Applications
1SV225	32	18.5 to 21	3	6.6 to 7.7	30	FM Hi-Fi tuners
1SV228	15	28.5 to 32.5	3	11.7 to 13.7	8	FM car radios, portable radios
JDV3C34	12	67.9 to 72.1	2	26.1 to 27.8	6	FM tuners

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Part Number										
Package										
USC 	ESC 	USQ 	fSC 	SC2 	V_R (V)	C_T (pF)	V_R (V)	C_T (pF)	V_R (V)	Applications
1SV324	1SV325				10	44 to 49.5	1	9.2 to 12.2	4	VCXO
	JDV2S36E				10	44 to 49.5	1	5.4 to 7.3	6	VCXO
1SV231					30	41 to 49.5	2	2.7 to 3.4	25	CATV tuners
1SV288	**1SV290B**				30	41 to 49.5	2	2.5 to 3.2	25	CATV tuners
1SV262	**1SV282**				34	33 to 38	2	2.6 to 3.0	25	CATV tuners
1SV269	**1SV283B**				34	29 to 34	2	2.5 to 2.9	25	CATV tuners
1SV232					30	28 to 32	2	2.75 to 3.1	25	CATV tuners
1SV215					30	26 to 32	2	2.5 to 3.2	25	CATV tuners
1SV322	**1SV323**				10	26 to 30	1	6 to 7.1	4	VCXO
1SV304	**1SV305**	JDV4P08U	JDV2S08FS		10	17.3 to 19.3	1	5.3 to 6.6	4	VHF/UHF VCO
	1SV331				10	17 to 19	1	4.25 to 5.43	4	VCXO
			JDV2S26FS	JDV2S26SC	10	15.35 to 16.31	1	5.27 to 5.60	4	VHF/UHF VCO
1SV270	**1SV281**				10	15 to 17	1	7.3 to 8.7	4	VHF/UHF VCO
1SV276	**1SV284**				10	15 to 17	1	7.0 to 8.5	4	VHF/UHF VCO
	1SV286				30	14.5 to 16.1	2	1.56 to 1.86	20	CATV converters
1SV214	**1SV278B**				30	14.16 to 16.25	2	2.11 to 2.43	25	VHF/UHF TV tuners
1SV229	**1SV279**		**JDV2S41FS***		15	14 to 16	2	5.5 to 6.5	10	VHF/UHF VCO
				JDV2S31SC	10	9.93 to 10.77	1	4.37 to 4.93	4	VHF/UHF VCO
1SV310	**1SV311**				10	9.7 to 11.1	1	4.45 to 5.45	4	VHF/UHF VCO
	1SV314		JDV2S10FS		10	7.3 to 8.4	0.5	2.75 to 3.4	2.5	VHF/UHF VCO
				JDV2S38SC*	10	7 to 7.74	0.5	2.76 to 3.12	2.5	VHF/UHF VCO
	JDV2S71E				30	6 to 7.2	1	0.49 to 0.64	25	UHF/SHF tuners
	1SV329		JDV2S13FS		10	5.7 to 6.7	1	1.85 to 2.45	4	VHF/UHF VCO
			JDV2S25FS	JDV2S25SC	10	5.62 to 5.99	1	1.91 to 2.12	4	VHF/UHF VCO
			JDV2S07FS		10	4.0 to 4.9	1	1.85 to 2.35	4	L-Band VCO
	1SV285				10	4.0 to 4.9	1	1.85 to 2.35	4	VHF/UHF VCO
	JDV2S05E		JDV2S05FS		10	3.85 to 4.55	1	1.94 to 2.48	4	VHF/UHF VCO
1SV239	**1SV280**		JDV2S40FS		15	3.8 to 4.7	2	1.5 to 2.0	10	L-Band VCO
			JDV2S29FS	JDV2S29SC	10	3.59 to 3.87	1	1.26 to 1.40	4	VHF/UHF VCO
1SV245	**1SV309**				30	3.31 to 4.55	2	0.61 to 0.77	25	BS tuners
	JDV2S01E				10	2.85 to 3.45	1	1.35 to 1.81	4	VHF/UHF VCO

- The products shown in bold are also manufactured in offshore fabs.

*: New product

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Radio-Frequency Switching Diodes

Radio-Frequency Switching Diodes

Part Number	Applications		V_R	I_R (Max)		V_F (Max)		C_T (Typ.)		r_s (Typ.)			Package
			(V)	(μA)	V_R (V)	(V)	I_F (mA)	(pF)	V_R (V)	(Ω)	I_F (mA)	f (MHz)	
1SS314	TV band switch	Single	30	0.1	15	0.85	2	0.7	6	0.5	2	100	USC
1SS381			30	0.1	15	0.85	2	0.7	6	0.5	2	100	ESC
1SS268		Twin	30	0.1	15	0.85	2	0.8	6	0.6	2	100	S-MINI
1SS269			30	0.1	15	0.85	2	0.8	6	0.6	2	100	S-MINI
1SS312			30	0.1	15	0.85	2	0.8	6	0.6	2	100	USM
1SS313			30	0.1	15	0.85	2	0.8	6	0.6	2	100	USM
1SS364			30	0.1	15	0.85	2	0.85	6	0.6	2	100	SSM
JDP2S12CR *	Switch, ATT	Single	180	10	50	1.0	50	1.0	40	0.4	10	100	S-FLAT
1SV307			30	0.1	30	1.0	50	0.5	1	1	10	100	USC
1SV308			30	0.1	30	1.0	50	0.5	1	1	10	100	ESC
JDP2S01E			30	0.1	30	0.95	50	0.65	1	0.65	10	100	ESC
JDP2S02AFS			30	0.1	30	0.94	50	0.3	1	1	10	100	fSC
JDP2S05FS			20	0.1	20	0.94	50	0.32	1	1.5	1	100	fSC
JDP2S05CT	Switch		20	0.1	20	0.94	50	0.32	1	1.5	1	100	CST2
JDP2S02ACT			30	0.1	30	1.0	50	0.3	1	1	10	100	CST2
JDP2S05SC	Switch, ATT		20	0.1	20	0.95	50	0.24	1	1.5	1	100	SC2
JDP2S08SC	Switch		30	0.1	30	0.95	50	0.21	1	1	10	100	SC2
JDP3C02AU *	Switch, ATT	Twin	30	0.05	30	0.89 (Typ.)	50	0.28	1	1.06	10	100	USM
JDP4P02AT			30	0.1	30	1.0	50	0.3	1	1	10	100	TESQ
JDP4L08CTC *	Switch	2 in 1	30	0.1	30	0.95	50	0.21	1	1	10	100	CST4C
JDP4P08CTC *			30	0.1	30	0.95	50	0.21	1	1	10	100	CST4C

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*: New product

Zener Diodes

Zener Diodes

Power Dissipation P (W)	0.7	1.0	2.0
Package Zener Voltage Vz (V) (Typ.)	S-FLAT (SMD)	M-FLAT (SMD)	M-FLAT (SMD)
6.2	**CRY62**		
6.8	**CRY68**		
7.5	**CRY75**		
8.2	**CRY82**		
9.1	**CRY91**		
10	**CRZ10**		
11	**CRZ11**		
12	**CRZ12**	**CMZB12**	**CMZ12**
13	**CRZ13**	**CMZB13**	**CMZ13**
15	**CRZ15**	**CMZB15**	**CMZ15**
16	**CRZ16**	**CMZB16**	**CMZ16** CMZM16 (Note)
18	**CRZ18**	**CMZB18**	**CMZ18**
20	**CRZ20**	**CMZB20**	**CMZ20**
22	**CRZ22**	**CMZB22**	**CMZ22**
24	**CRZ24**	**CMZB24**	**CMZ24**
27	**CRZ27**	**CMZB27**	**CMZ27**
30	**CRZ30**	**CMZB30**	**CMZ30**
33	**CRZ33**	**CMZB33**	**CMZ33**
36	**CRZ36**	**CMZB36**	**CMZ36**
39	**CRZ39**	**CMZB39**	**CMZ39**
43	**CRZ43**	**CMZB43**	**CMZ43**
47	**CRZ47**	**CMZB47**	**CMZ47**
48			
51		**CMZB51**	**CMZ51**
53		**CMZB53**	**CMZ53**

Note: P: 1 W, bi-directional zener diode

- The products shown in bold are also manufactured in offshore fabs.
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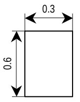
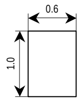
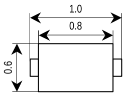
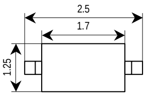
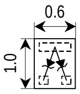
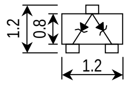
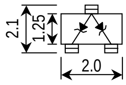
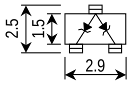
ESD Protection Diodes (Standard Type) (Unidirectional)

Number of Diodes	Single Type				Vz		IR max			CT		
Package	SC2  (mm)	CST2  (mm)	fSC  (mm)	USC  (mm)	(V)	@Iz (mA)	(µA)	SC2 Package (µA)	@VR (V)	(pF)	SC2 Package (pF)	@VR (V)
Part Number	—	—	—	—	2.0	5	120	—	1	63	—	0
	—	—	—	—	3.3		—	TBD	TBD	—	TBD	0
	DF2S3.6SC **	—	—	—	3.6		10	TBD	1	57	TBD	0
	DF2S5.1SC *	—	—	—	5.1		—	0.006	3.5	—	25	0
	DF2S5.6SC **	DF2S5.6CT	DF2S5.6FS	—	5.6		1	TBD	3.5	40	TBD	0
	DF2S6.2SC *	DF2S6.2CT	DF2S6.2FS	—	6.2		2.5	0.2n	5	32	16	0
	DF2S6.8SC *	DF2S6.8CT	DF2S6.8FS	—	6.8		0.5	0.6n	5	25	15	0
	DF2S8.2SC *	DF2S8.2CT	DF2S8.2FS	—	8.2		0.5	0.2	6.5	20	10	0
	—	—	DF2S10FS	—	10		0.5	—	8	16	—	0
	—	—	DF2S12FS	DF2S12FU	12		0.05	—	9	15	—	0
	—	DF2S16CT **	DF2S16FS	—	16		0.5	—	12	10	—	0
	—	DF2S18CT **	—	—	18		0.5	—	14	10	—	0
	—	DF2S20CT **	DF2S20FS	—	20		0.5	—	15	9.0	—	0
	—	DF2S24CT **	DF2S24FS	—	24		0.5	—	19	8.5	—	0
	—	DF2S30CT **	DF2S30FS	—	30	2	0.5	—	23	7.0	—	0

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

*: New product
**: Under development

Number of Diodes	2 in 1				Vz (V)		IR (µA)		CT (pF)	
Package	CST3	VESM	USM	S-MINI		@Iz		@Vz		@VR
Package Dimensions and Internal Connections	 (mm)	 (mm)	 (mm)	 (mm)	Typ.	(mA)	Max	(V)	Typ.	(V)
Part Number	DF3A3.3CT	DF3A3.3FV	DF3A3.3FU	—	3.3	5	20	1.0	115	0
	DF3A3.6CT	DF3A3.6FV	DF3A3.6FU	—	3.6	5	10	1.0	110	0
	—	—	DF3A4.3FU	—	4.3	5	10	1.8	100	0
	DF3A5.6CT	DF3A5.6FV	DF3A5.6FU	DF3A5.6F	5.6	5	1	2.5	65	0
	DF3A6.2CT	DF3A6.2FV	DF3A6.2FU	DF3A6.2F	6.2	5	1	3.0	55	0
	DF3A6.8CT	DF3A6.8FV	DF3A6.8FU	DF3A6.8F	6.8	5	0.5	5.0	45	0
	DF3A8.2CT	DF3A8.2FV	DF3A8.2FU	—	8.2	5	0.5	6.5	38	0

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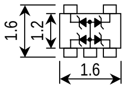
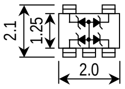
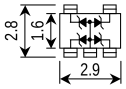
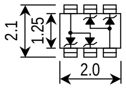
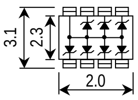
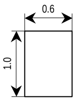
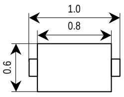
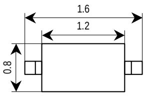
The internal connection diagrams only show the general configurations of the circuits.

Number of Diodes	4 in 1				7 in 1	Vz (V)		IR (µA)		CT (pF)	
Package	ESV	USV	SMV	US6	US8		@Iz		@Vz		@VR
Package Dimensions and Internal Connections	 (mm)	 (mm)	 (mm)	 (mm)	 (mm)	Typ.	(mA)	Max	(V)	Typ.	(V)
Part Number	DF5A3.3JE	DF5A3.3FU	DF5A3.3F	—	—	3.3	5	20	1.0	115	0
	DF5A3.6JE	DF5A3.6FU	DF5A3.6F	—	—	3.6	5	10	1.0	110	0
	DF5A5.6JE	DF5A5.6FU	DF5A5.6F	—	DF8A5.6FK	5.6	5	1	2.5	65	0
	DF5A6.2JE	DF5A6.2FU	DF5A6.2F	—	DF8A6.2FK	6.2	5	1	3.0	55	0
	DF5A6.8JE	DF5A6.8FU	DF5A6.8F	DF6A6.8FU	DF8A6.8FK	6.8	5	0.5	5.0	45	0
	DF5A8.2JE	DF5A8.2FU	DF5A8.2F	—	—	8.2	5	0.5	6.5	38	0
	—	DF5A12FU	—	—	—	12	5	0.05	9	26	0

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

The internal connection diagrams only show the general configurations of the circuits.

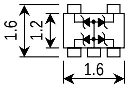
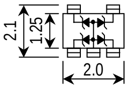
(Bidirectional)

Number of Diodes	Single Type			V_{BR}		I_R max		C_T	
Package	CST2  (mm)	fSC  (mm)	ESC  (mm)	(V)	@I_R (mA)	(µA)	@V_R (V)	(pF)	@V_R (V)
Part Number	DF2B6.8CT *	DF2B6.8FS *	DF2B6.8E*	6.8	1	0.5	5	15	0

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

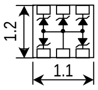
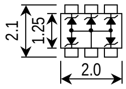
*: New product

(High-Speed Type)

Number of Diodes	4 in 1		V_Z (V)		C_T (pF)	
Package	ESV	USV				
Package Dimensions and Internal Connections	 (mm)	 (mm)	Typ.	@I_Z (mA)	Typ.	@V_Z (V)
Part Number	DF5A3.6CJE	DF5A3.6CFU	3.6	5	52	0
	DF5A5.6CJE	DF5A5.6CFU	5.6	5	29	0
	DF5A6.2CJE	DF5A6.2CFU	6.2	5	25	0
	DF5A6.8CJE	DF5A6.8CFU	6.8	5	23	0
	DF5A8.2CJE	DF5A8.2CFU	8.2	5	19	0

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

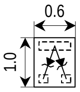
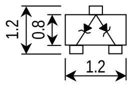
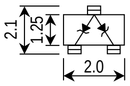
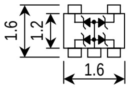
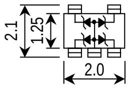
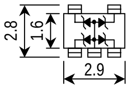
The internal connection diagrams only show the general configurations of the circuits.

Number of Diodes	5 in 1	5 in 1	V_Z (V)		C_T (pF)	
Package	CST6F	US6				
Package Dimensions and Internal Connections	 (mm)	 (mm)	Typ.	@I_Z (mA)	Typ.	@V_Z (V)
Part Number	—	DF7A5.6CFU	5.6	5	34	0
	DF7A6.2CTF *	DF7A6.2CFU	6.2	5	28	0
	—	DF7A6.8CFU	6.8	5	26	0

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components. *: New product

The internal connection diagrams only show the general configurations of the circuits.

(Super High-Speed Type)

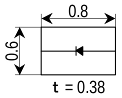
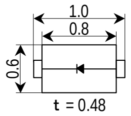
Number of Diodes	2 in 1			4 in 1			V_Z (V)		C_T (pF)	
Package	CST3	VESM	USM	ESV	USV	SMV				
Package Dimensions and Internal Connections	 (mm)	 (mm)	 (mm)	 (mm)	 (mm)	 (mm)	Typ.	@I_Z (mA)	Typ.	@V_Z (V)
Part Number	—	DF3A5.6LFV *	DF3A5.6LFU	DF5A5.6LJE	DF5A5.6LFU	—	5.6	5	8.0	0
	—	DF3A6.2LFV *	DF3A6.2LFU	DF5A6.2LJE	DF5A6.2LFU	—	6.2	5	6.5	0
	DF3A6.8LCT *	DF3A6.8LFV *	DF3A6.8LFU	DF5A6.8LJE	DF5A6.8LFU	DF5A6.8LF	6.8	5	6	0
	—	DF3A8.2LFV *	DF3A8.2LFU	—	DF5A8.2LFU	DF5A8.2LF	8.2	5	5	0

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

*: New product

The internal connection diagrams only show the general configurations of the circuits.

(Ultra High-Speed Type)

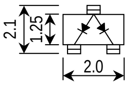
Number of Diodes	Single Type	Single Type	V_Z (V)			I_Z (μA)		C_T (pF)	
Package	CST2	fSC							
Package Dimensions and Internal Connections	 (mm)	 (mm)	Min	Typ.	@I_Z (mA)	Max	@V_Z (V)	Max	@V_Z (V)
Part Number	DF2S6.8UCT **	DF2S6.8UFS *	5.3	6.8	1	0.5	5.0	2.0	0

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

*: New product

**: Under development

The internal connection diagrams only show the general configurations of the circuits.

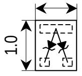
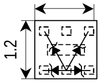
Number of Diodes	2 in 1	V_R (V)			I_R (μA)		C_T (pF)	
Package	USM							
Package Dimensions and Internal Connections	 (mm)	Min	Typ.	@I_R (mA)	Max	@V_R (V)	Max	@V_R (V)
Part Number	DF3A6.8UFU *	5.3	6.8	1	0.5	5.0	2.5	0

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

*: New product

The internal connection diagrams only show the general configurations of the circuits.

(With EMI Filter)

Number of Diodes	2 in 1	4 in 1	V_Z (V)			I_Z (μA)		C_T (pF)		$R_{I/O}$ (Ω)	
Package	CST3	CST6F									
Package Dimensions and Internal Connections	 (mm)	 (mm)	Min	Typ.	@I_Z (mA)	Max	@V_Z (V)	Max	@V_Z (V)	Typ.	@I_T (mA)
Part Number	DF3S6.8ECT **	DF6D6.8ECTF **	5.3	6.8	1	40	0	40	0	100	20

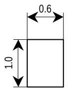
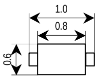
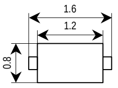
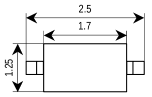
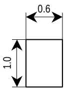
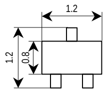
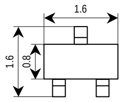
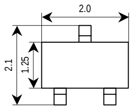
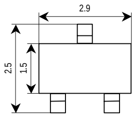
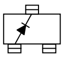
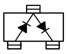
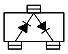
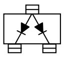
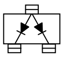
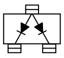
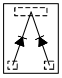
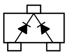
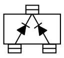
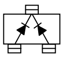
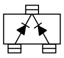
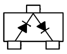
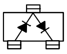
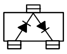
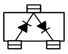
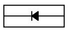
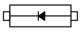
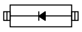
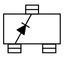
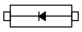
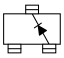
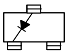
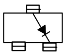
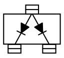
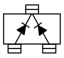
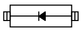
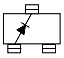
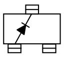
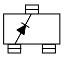
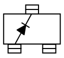
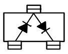
- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

**: Under development

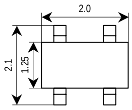
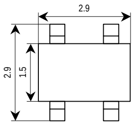
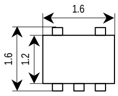
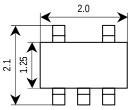
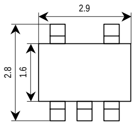
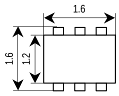
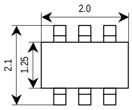
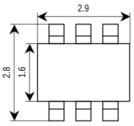
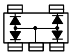
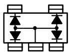
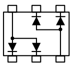
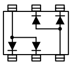
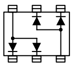
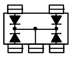
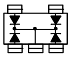
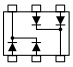
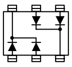
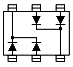
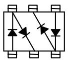
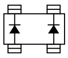
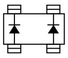
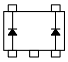
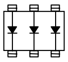
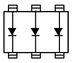
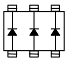
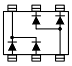
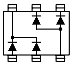
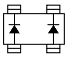
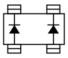
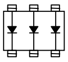
The internal connection diagrams only show the general configurations of the circuits.

Switching Diodes

Small-Signal Switching Diodes and Multiple Switching Diodes

V_R (V)	I_O (mA)	t_{rr} (ns)	CST2  (mm)	fSC  (mm)	ESC  (mm)	USC  (mm)	CST3  (mm)	VESM  (mm)	SSM  (mm)	USM (SC-70)  (mm)	S-MINI (SC-59)  (mm)
30	100	—									1SS307 
80	100	—								1SS412 	1SS379 
80	100	1.6 Typ.							1SS360 	**1SS300** 	**1SS181** 
80	100	1.6 Typ.					1SS361CT 	1SS361FV 	1SS361 	**1SS301** 	**1SS184** 
80	100 (80)	1.6 Typ.						1SS362FV 	(1SS362) 	**1SS302** 	**1SS226** 
80	100 (80)	1.6 Typ.	1SS387CT 		1SS387 	1SS352 					**1SS193** 
				1SS427 							**1SS196** 
											1SS187 
											1SS190 
80	100	1.6 Typ.									
80	200	7.0 Typ.									1SS336 
80	200	6.0 Typ.									1SS337 
200	100	10 (30) Typ.				1SS403 				1SS370 	**1SS250** 
400	100	500 (1500) Typ.								1SS397 	(1SS311) 
400	100	500 Typ.									1SS398 

- The I_O ratings enclosed in parenthesis are for those devices whose part numbers are enclosed in parentheses.
- The products shown in bold are also manufactured in offshore fabs.
- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

USQ  (mm)	SMQ (SC-61)  (mm)	ESV  (mm)	USV  (mm)	SMV (SC-74A)  (mm)	ES6  (mm)	US6  (mm)	SM6 (SC-74)  (mm)	Remarks
								Low leakage current, Single
								Low leakage current, Series-connected
			HN4D01JU 	1SS308 	HN1D01FE 	**HN1D01FU** 	**HN1D01F** 	High-speed switching, Common anode
			HN4D02JU 	1SS309 	HN1D02FE 	**HN1D02FU** 	**HN1D02F** 	High-speed switching, Common cathode
						HN1D04FU 		High-speed switching, Series-connected
1SS382 	1SS272 	HN2D01JE 				(HN2D01FU) 	(**HN2D01F**) 	High-speed switching, Independent diodes
						(HN2D02FU) 		High-speed switching, Independent diodes
								High-speed switching, Independent diodes
								High-speed switching, Independent diodes
						HN1D03FU 	**HN1D03F** 	High-speed switching, Common cathode + Common anode
								High current, Common anode
								High current, Common anode
	(1SS306) 							High breakdown voltage, Independent diodes
	1SS399 						HN2D03F 	High breakdown voltage, Independent diodes
								High breakdown voltage, Series-connected

The internal connection diagrams only show the general configurations of the circuits.

Schottky Barrier Diodes

Schottky Barrier Diodes (SBDs)

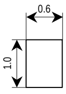
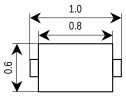
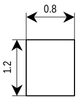
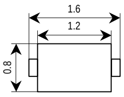
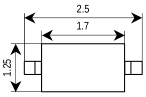
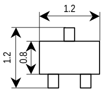
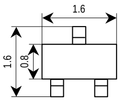
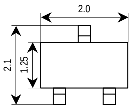
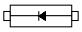
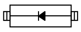
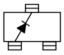
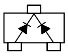
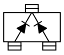
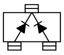
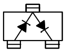
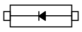
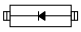
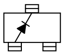
Average Forward Currents (A)	Package	Peak Repetitive Reverse Voltage (V)				
		20	30	40	60	120
0.7	US-FLAT			CUS03	CUS04	
1	US-FLAT	CUS05 CUS06	CUS01 CUS02 CUS10I30A *			
	S-FLAT	**CRS06**	**CRS01** **CRS02** **CRS03** **CRS05** **CRS11** **CRS10I30A** * **CRS10I30B** *	**CRS04**	**CRS12** **CRS13**	
	M-FLAT		**CMS08** **CMS09**	**CMS10**		
	VS-8		TPCF8E02 (Note 1)			
1.5	US-FLAT		CUS15I30A *			
	S-FLAT		**CRS08** **CRS09** **CRS15I30A** *			
2	S-FLAT		**CRS14** **CRS20I30A** *			
	M-FLAT		**CMS06** **CMS07** **CMS17**	**CMS11**	**CMS14**	
3	S-FLAT		**CRS15**			
	M-FLAT		**CMS01** **CMS02** **CMS03** **CMS18**	**CMS16** **CMS19**	**CMS15** **CMS20**	
5	M-FLAT		**CMS04** **CMS05**			
10	L-FLAT		CLS01	CLS02	CLS03	

Note 1: Two separate diodes

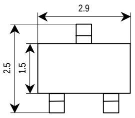
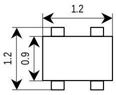
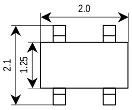
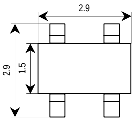
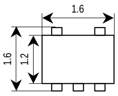
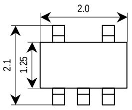
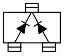
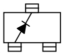
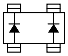
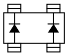
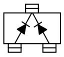
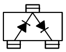
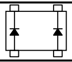
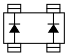
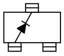
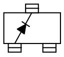
*: New product

- The products shown in bold are also manufactured in offshore fabs.
- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Small-Signal Schottky Barrier Diodes and Multiple Schottky Barrier Diodes

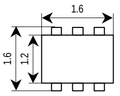
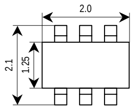
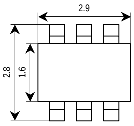
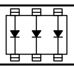
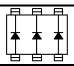
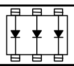
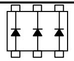
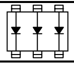
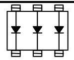
Absolute Maximum Ratings		Electrical Characteristics (Ta = 25°C)			CST2	fSC	CST2B	ESC	USC	VESM	SSM	USM (SC-70)
		V_F (V)			 (mm)	 (mm)	 (mm)	 (mm)	 (mm)	 (mm)	 (mm)	 (mm)
V_R (V)	I_O (mA)	Typ.	Max	@I_F (mA)								
10	50	0.63	1.0	50								
10	100	0.23	0.3	5				1SS389	1SS367			1SS395
		0.35	0.5	100								
10	100	0.23	0.3	5						1SS385FV	1SS385	1SS378
		0.35	0.5	100								
10	100	0.23	0.3	5								1SS372
		0.35	0.5	100								
20	50	0.33	—	1		1SS413		1SS405	1SS406			
		0.5	0.55	50								
20	200	0.42	0.5	200				1SS424 				
20	300	0.16	—	1					1SS404			1SS401
		0.38	0.45	300								
20	500	0.50	0.55	500								
20	1000	0.46	0.55	1000								

- The products shown in bold are also manufactured in offshore fabs.
- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

S-MINI (SC-59)  (mm)	TESQ  (mm)	USQ  (mm)	SMQ (SC-61)  (mm)	ESV  (mm)	USV  (mm)	Remarks
1SS321 						Low leakage current, Common cathode
1SS394 		1SS384 	1SS391 			Low V_F, Independent diodes
1SS377 						Low V_F, Common cathode
1SS374 						Low V_F, Series-connected
	HN2S03T 	1SS402 				Low leakage current, High-speed SW
						Low I_R
						Low V_F, High current
1SS344 						High current, Single
1SS349 						High current, Single

The internal connection diagrams only show the general configurations of the circuits.

Small-Signal Schottky Barrier Diodes and Multiple Schottky Barrier Diodes (Continued)

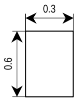
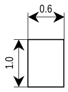
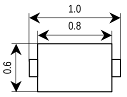
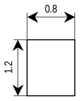
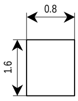
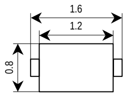
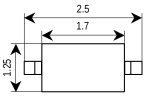
Absolute Maximum Ratings		Electrical Characteristics (Ta = 25°C)			ES6  (mm)	US6  (mm)	SM6 (SC-74)  (mm)	Remarks
V_R (V)	I_O (mA)	V_F (V) Typ.	Max	@I_F (mA)				
10	50	0.63	1.0	50				Low leakage current, Common cathode
10	100	0.23	0.3	5		HN2S01FU HN2S05FU	**HN2S01F**	Low V_F Independent diodes
		0.35	0.5	100		 		
10	100	0.23	0.3	5				Low V_F Common cathode
		0.35	0.5	100				
10	100	0.23	0.3	5				Low V_F, Series-connected
		0.35	0.5	100				
20	50	0.33	—	1	HN2S03FE	HN2S03FU		Low leakage current, High-speed SW
		0.5	0.55	50				
20	200	0.42	0.5	200				Low I_R
20	300	0.16	—	1		HN2S04FU *		Low V_F High current
		0.38	0.45	300				
20	500	0.50	0.55	500				High current, Single
20	1000	0.46	0.55	1000				High current, Single

- The products shown in bold are also manufactured in offshore fabs.
- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

*: New product

The internal connection diagrams only show the general configurations of the circuits.

Small-Signal Schottky Barrier Diodes and Multiple Schottky Barrier Diodes (Continued)

Absolute Maximum Ratings		Electrical Characteristics (Ta = 25°C)			SC2	CST2	fSC	CST2B	CST2C	ESC	USC
		VF (V)									
VR (V)	IO (mA)	Typ.	Max	@IF (mA)							
30	100	0.38	0.5	100		1SS416CT	1SS416				
30	100	0.41	0.5	100	DSF01S30SC *						
30	100	0.51	0.62	100	DSR01S30SC *						
30	200	0.52	0.6	200		1SS420CT/DSR520CT *				1SS420/DSR520 *	
30	200	0.44	0.5	200		DSF521CT *				1SS421/DSF521 *	
30	500	0.40	0.45	500				DSF05S30CTB *			DSF05S30U *
30	500	0.50	0.55	500				DSR05S30CTB *			DSR05S30U *
30	700	0.40	0.45	700							DSF07S30U *
30	700	0.50	0.55	700							DSR07S30U *
40	100	0.54 (0.56)	0.6 (0.62)	100		(1SS417CT)	(1SS417)			1SS388	1SS357
40	100	0.54	0.6	100							
40	100	0.54 (0.56)	0.6 (0.62)	100							
80	100	0.56	0.7	100							

- The IO ratings enclosed in parenthesis are for those devices whose part numbers are enclosed in parentheses.
- The products shown in bold are also manufactured in offshore fabs.
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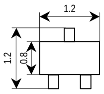
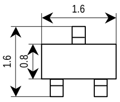
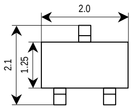
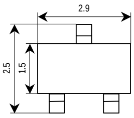
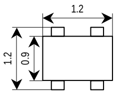
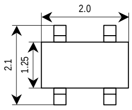
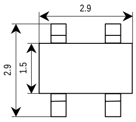
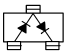
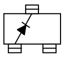
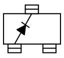
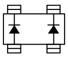
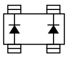
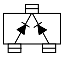
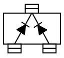
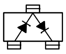
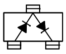
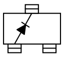
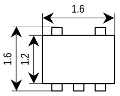
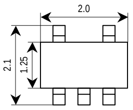
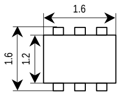
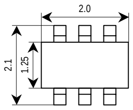
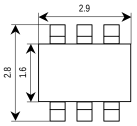
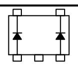
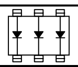
	VESM  (mm)	SSM  (mm)	USM (SC-70)  (mm)	S-MINI (SC-59)  (mm)	TESQ  (mm)	USQ  (mm)	SMQ (SC-61)  (mm)	Remarks
		1SS422						Low V_F
								
								Low V_F
								Low I_R
								Low I_R
								Low V_F
								Low V_F
								Low I_R
								High current, Single Improved V_F and I_R
								High current, Single Improved V_F and I_R
			1SS322	**1SS294**		1SS383	1SS319	Standard, Independent diodes
								
			1SS393	1SS392				Standard, Common cathode
								
		(1SS423)		1SS396				Standard, Series-connected
								
				1SS348				High current, Single
								

*: New product

The internal connection diagrams only show the general configurations of the circuits.

Absolute Maximum Ratings		Electrical Characteristics (Ta = 25°C)			ESV  (mm)	USV  (mm)	ES6  (mm)	US6  (mm)	SM6 (SC-74)  (mm)	Remarks
		V_F (V)								
V_R (V)	I_O (mA)	Typ.	Max	@I_F (mA)						
30	100	0.38	0.5	100						Low V_F
30	100	0.37	—	100						Low V_F
30	100	0.46	—	100						Low I_R
30	200	0.52	0.6	200						Low I_R
30	200	0.44	0.5	200						Low V_F
30	500	0.40	0.45	500						Low V_F
30	500	0.50	0.55	500						Low I_R
30	700	0.40	0.45	700						High current, Single Improved V_F and I_R
30	700	0.50	0.55	700						High current, Single Improved V_F and I_R
40	100	0.54 (0.56)	0.6 (0.62)	100	HN2S02JE 			HN2S02FU 		Standard, Independent diodes
40	100	0.54	0.6	100						Standard, Common cathode
40	100	0.54 (0.56)	0.6 (0.62)	100						Standard, Series-connected
80	100	0.56	0.7	100						High current, Single

- The I_O ratings enclosed in parenthesis are for those devices whose part numbers are enclosed in parentheses.
- The products shown in bold are also manufactured in offshore fabs.
- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

The internal connection diagrams only show the general configurations of the circuits.

Radio-Frequency Schottky Barrier Diodes

Part Number	Applications	V_R ♣V_{RM} (V)	I_F (mA)	V_F (Typ.)		C_T (Typ.)		Package
				(V)	I_F (mA)	(pF)	V_R (V)	
1SS154	VHF to S-band mixers	6	30	0.5	10	0.8	0	S-MINI (Single)
1SS271		6	30	0.5	10	0.8	0	S-MINI (Twin)
1SS295	UHF MIX	4	30	0.25	2	0.6	0.2	S-MINI (Twin)
1SS315		♣5	30	0.25	2	0.6	0.2	USC
JDH2S01FS		4	25	0.25	2	0.6	0.2	fSC
JDH3D01S		4	25	0.25	2	0.6	0.2	SSM (Twin)
JDH3D01FV		4	25	0.25	2	0.6	0.2	VESM (Twin)
JDH2S02FS		10	10	0.24	1	0.3	0.2	fSC
JDH2S02SC		10	10	0.24	1	0.3	0.2	SC2
JDH2S04FS *		10	10	0.18	1	0.4	0.2	fSC

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

*: New product

Photodiodes

Part Number	Package	Electrical/Optical Characteristics (Ta = 25°C)							Applications
		Short-Circuit Current		Dark Current		Peak Sensitive Wavelength (nm)	Half-Value Angle (°)	Impermeable to Visible Light	
		Min (μA)	E (mW/cm^2)	Max (nA)	V_R (V)				
TPS703(F)	Side-view package	0.9	0.1	30	10	960	±65	●	Remote controls
TPS704(F)		0.5	0.1	30	10	1000	±65	●	

Note: E = radiant incidence; V_R = reverse voltage

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

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微波光电部专业研制、代理经销高频、微波、光纤、光电元器件、组件、部件、模块、整机；电磁兼容元器件、材料、设备；微波CAD、EDA 软件、开发测试仿真工具；微波、光纤仪器仪表。欢迎国外高科技微波、光纤厂商将优秀产品介绍到中国、共同开拓市场。长期大量现货专业批发高频、微波、卫星、光纤、电视、CATV 器件: 晶振、VCO、连接器、PIN 开关、变容二极管、开关二极管、低噪晶体管、功率电阻及电容、放大器、功率管、MMIC、混频器、耦合器、功分器、振荡器、合成器、衰减器、滤波器、隔离器、环行器、移相器、调制解调器；光电子元器件和组件：红外发射管、红外接收管、光电开关、光敏管、发光二极管和发光二极管组件、半导体激光二极管和激光器组件、光电探测器和光接收组件、光发射接收模块、光纤激光器和光放大器、光调制器、光开关、DWDM 用光发射和接收器件、用户接入系统光光收发器件与模块、光纤连接器、光纤跳线/尾纤、光衰减器、光纤适 配器、光隔离器、光耦合器、光环行器、光复用器/转换器；无线收发芯片和模组、蓝牙芯片和模组。

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