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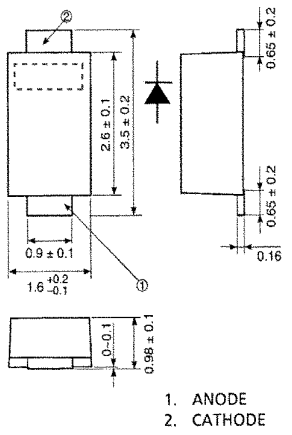
TOSHIBA Rectifier Silicon Diffused Type

CRG01, CRG02

General Purpose Rectifier Applications

- Average forward current: $I_{F\ (AV)}$ = 0.7 A
- Repetitive peak reverse voltage: V_{RRM} = 100 V, 400 V
- Suitable for compact assembly due to small surface-mount package "S−FLAT™" (Toshiba package name)

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	3-2A1A

Weight: 0.013 g (typ.)

Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit
Repetitive peak reverse voltage	CRG01	V_{RRM}	100	V
	CRG02		400	
Average forward current		$I_{F(AV)}$	0.7	A
Peak one cycle surge forward current (non-repetitive)		I_{FSM}	15 (50 Hz)	A
			16.5 (60 Hz)	
Junction temperature		T_j	−40~150	°C
Storage temperature		T_{stg}	−40~150	°C

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Typ.	Max	Unit
Peak forward voltage	$V_{FM\ (1)}$	I_{FM} = 0.1 A	0.88	—	V
	$V_{FM\ (2)}$	I_{FM} = 0.7 A	—	1.1	
	$V_{FM\ (3)}$	I_{FM} = 1.0 A	1.1	—	
Repetitive peak reverse current	I_{RRM}	V_{RRM} = Rated	—	10	μA
Thermal resistance	$r_{th\ (j-a)}$	Device mounted on a ceramic board (soldering land: 2 mm × 2 mm)	—	65	°C/W
		Device mounted on a glass-epoxy board (soldering land: 6 mm × 6 mm)	—	130	

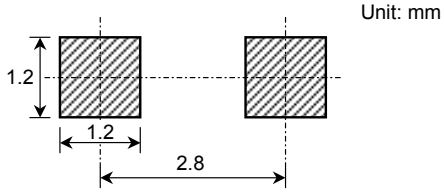
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Marking

Abbreviation Code	Part No.
G1	CRG01
G2	CRG02

Standard Soldering Pad

Unit: mm



Handling Precaution

The maximum ratings denote the absolute maximum ratings, which are rated values and must not be exceeded during operation, even for an instant. The following are the general derating methods that we recommend when you design a circuit with a device.

V_{RRM}: We recommend that the worst case voltage, including surge voltage, be no greater than 80% of the maximum rating of V_{RRM} for a DC circuit and be no greater than 50% of that of V_{RRM} for an AC circuit. V_{RRM} has a temperature coefficient of 0.1%/°C. Take this temperature coefficient into account designing a device at low temperature.

$I_{F(AV)}$: We recommend that the worst case current be no greater than 80% of the maximum rating of $I_{F(AV)}$. Carry out adequate heat design. If you can't design a circuit with excellent heat radiation, set the margin by using an allowable Tamax-$I_{F(AV)}$ curve.

This rating specifies the non-repetitive peak current in one cycle of a 50-Hz sine wave, condition angle 180. Therefore, this is only applied for an abnormal operation, which seldom occurs during the lifespan of the device.

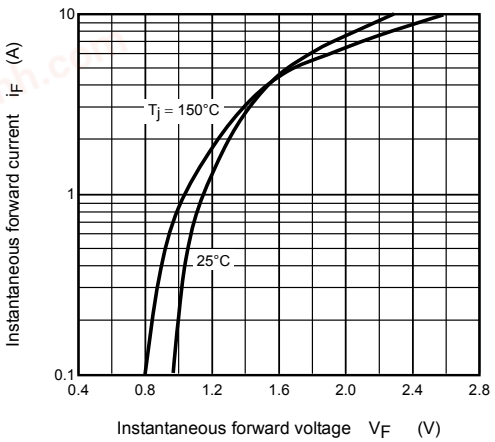
We recommend that a device be used at a Tj of below 120°C under the worst load and heat radiation conditions.

Thermal resistance between junction and ambient fluctuates depending on the device's mounting condition. When using a device, design a circuit board and a soldering land size to match the appropriate thermal resistance value.

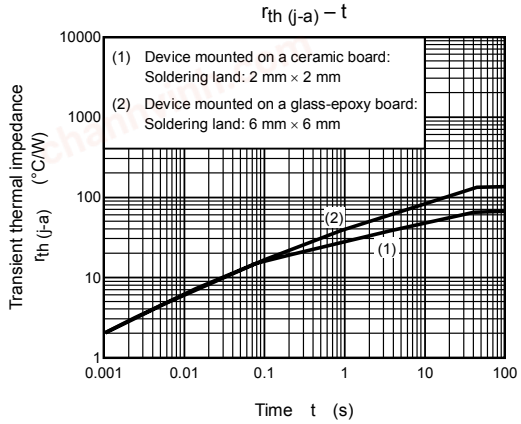
Please refer to the Rectifiers databook for further information.

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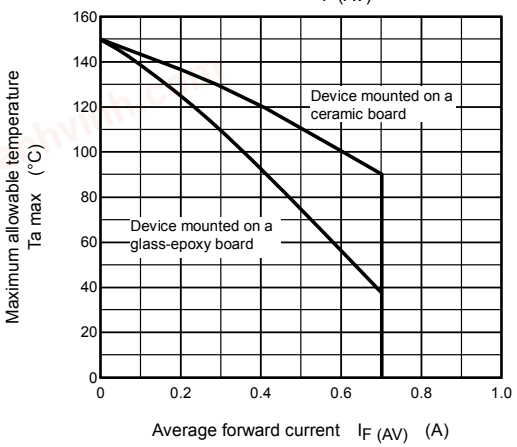
$i_F - v_F$



$r_{th\ (j\text{-}a)} - t$

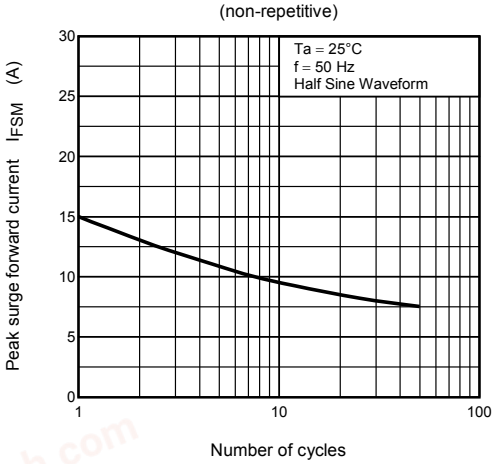


Ta max – $I_{F\ (AV)}$



	Device mounted on a ceramic board	Device mounted on a glass-epoxy board
Soldering land	2 mm□	6 mm□
Board size	50 mm□	50 mm□
Board	0.64 t	1.6 t

Surge forward current
(non-repetitive)



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