

CMC01

For Strobe Discharge Circuit

- Repetitive peak reverse voltage
 - : VRRM = 400 V
 - Average forward current: $I_{F(AV)} = 1.0$ A
 - Repetitive peak forward current: $I_{FRM} = 150$ A (Refer to the Note 2)
- Small surface-mount package
 "M-FLAT™" (Toshiba package name)

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Repetitive peak reverse voltage	VRRM	400	V
Average forward current (Note 1)	$I_{F(AV)}$	1.0(Ta=47°C)	A
Peak one cycle surge forward current (non-repetitive)	I_{FSM}	30 (50 Hz)	A
Repetitive peak forward current (Note 2)	I_{FRM}	150	A
Junction temperature	Tj	-40~150	°C
Storage temperature range	Tstg	-40~150	°C

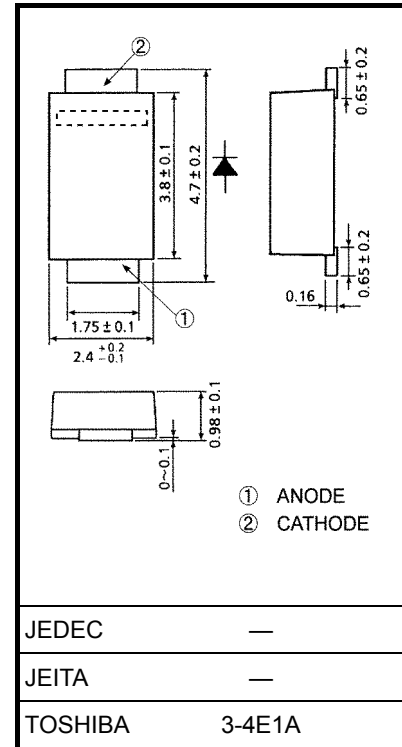
Note 1: Device mounted on a glass-epoxy board
 board size: 50 mm × 50 mm
 soldering land: 6 mm × 6 mm
 glass-epoxy board thickness 1.6t

Note 3: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Electrical Characteristics (Ta = 25°C)

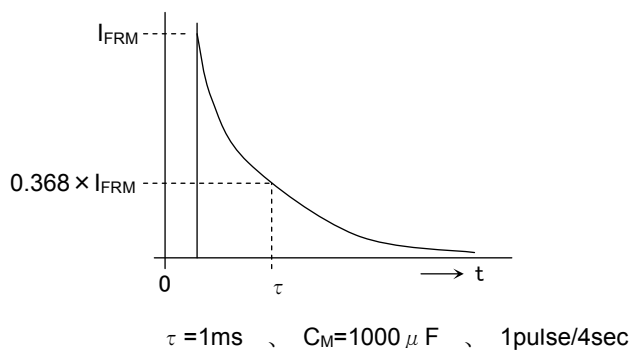
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Peak forward voltage	VFM	$I_{FM} = 1.0$ A (Pulse test)	—	0.86	1.0	V
Repetitive peak reverse current	IRRM	VRRM = 400 V (Pulse test)	—	—	10	μA
Thermal resistance	Rth(j-a)	Device mounted on a ceramic board Board size: 50 mm × 50 mm Soldering land: 2 mm × 2 mm Ceramic board thickness: 0.64t	—	—	60	°C/W
		Device mounted on a glass-epoxy board Board size: 50 mm × 50 mm Soldering land: 6 mm × 6 mm glass-epoxy board thickness: 1.6t	—	—	110	
		Device mounted on a glass-epoxy board Board size: 50 mm × 50 mm Soldering land: 2.1 mm × 1.4 mm glass-epoxy board thickness: 1.6t	—	—	180	
	Rth(j-ℓ)	—	—	16	°C/W	

Unit: mm



Weight: 0.023 g (typ.)

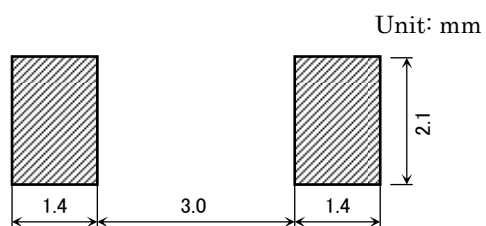
Note 2 Repetitive peak forward current waveform



Marking

Abbreviation Code	Part No.
C1	CMC01

Standard Soldering Pad



Handling Precaution

The absolute 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 absolute 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 absolute maximum rating of $I_{F(AV)}$.

Carry out adequate heat design. If you can't design a circuit with excellent heat radiation, please set the margin by using an allowable $T_{max}-I_{F(AV)}$ curve.

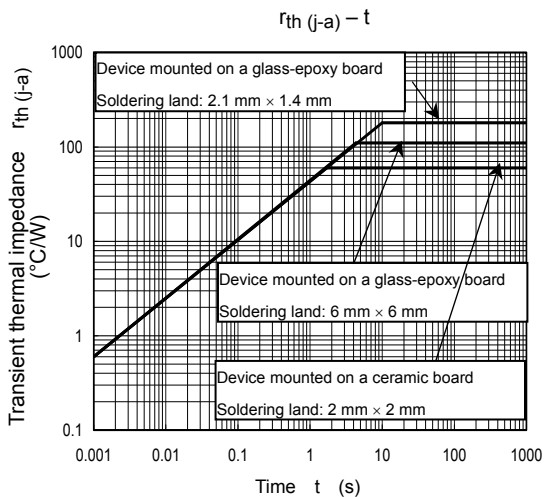
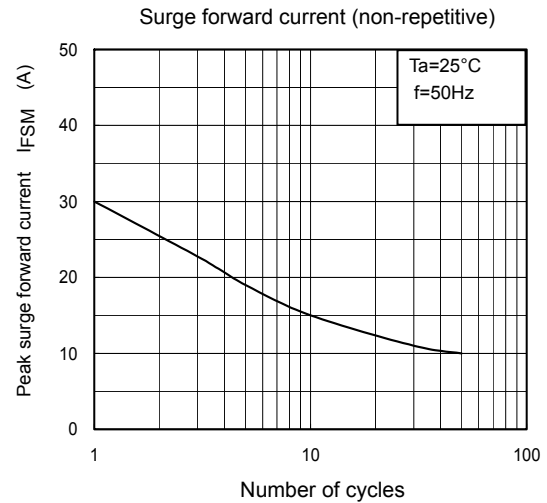
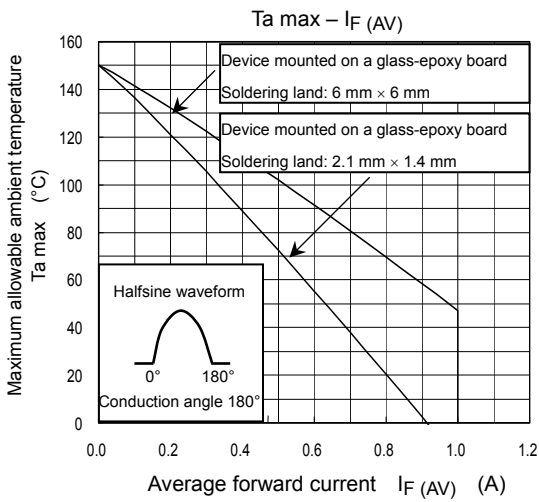
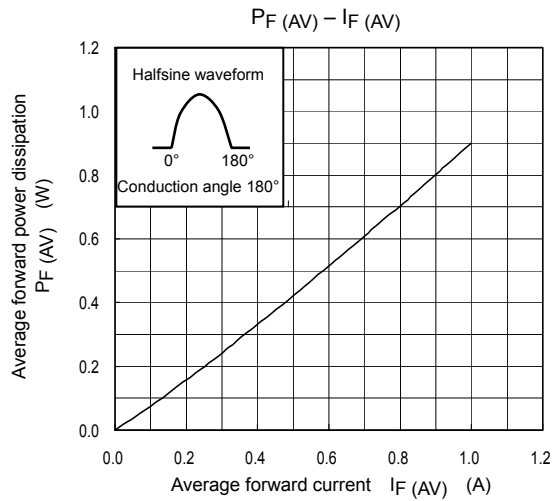
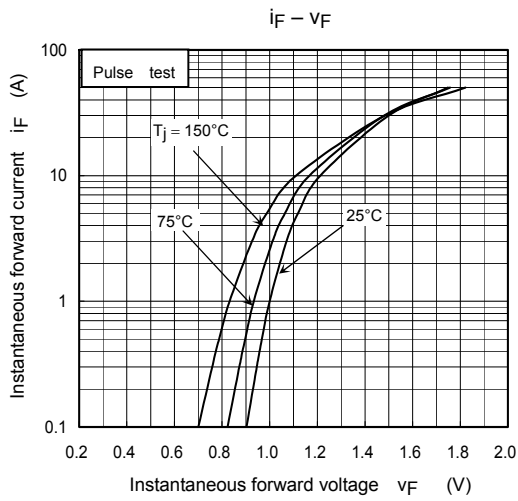
This rating is only applied for a strobe flash circuit. We recommend that the worst case current be controlled less than the absolute maximum rating of I_{FRM} . The total number of repetitive currents must be less than 5000 times within the lifespan of the device.

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 T_j 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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