

TOSHIBA RECTIFIER SILICON DIFFUSED TYPE

CMC02

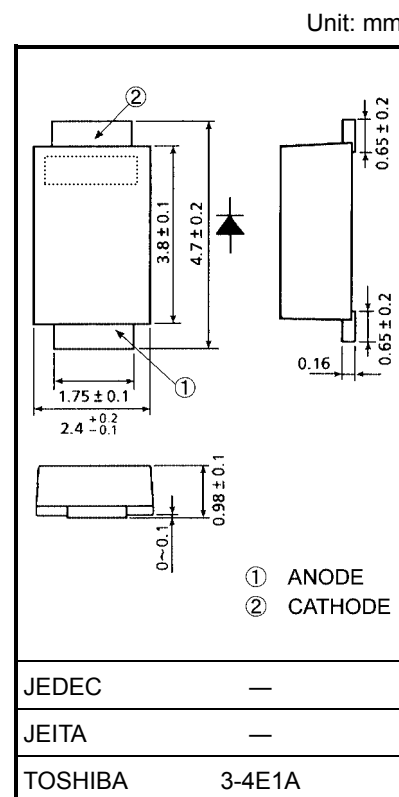
For Strobe Discharge Circuit

- Repetitive peak reverse voltage: $V_{RRM} = 400\text{ V}$
- Average forward current: $I_F (AV) = 1.0\text{ A}$
- Low forward voltage: $V_{FM} = 1.0\text{ V (max.)}$
- Repetitive peak forward current: $I_{FRM} = 150\text{ A (Note 2)}$
- Small surface-mount package, the "M-FLATTM" (Toshiba package name)

Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Repetitive peak reverse voltage	V_{RRM}	400	V
Average forward current	$I_F (AV)$	1.0 (Note 1)	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	T_j	$-40 \sim 150$	$^\circ\text{C}$
Storage temperature range	T_{stg}	$-40 \sim 150$	$^\circ\text{C}$

Note 1: $T_a = 92^\circ\text{C}$
 Device mounted on a ceramic board
 Board size: 50 mm × 50 mm
 Soldering land: 2 mm × 2 mm
 Board thickness: 0.64t

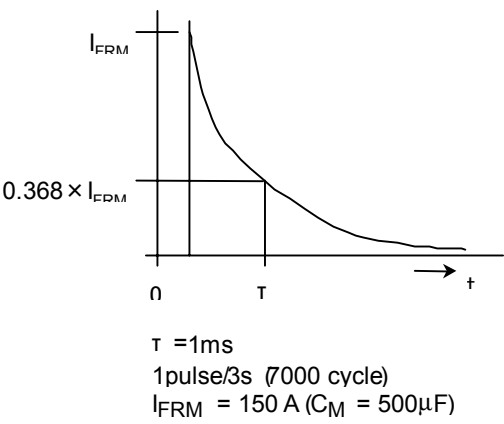


Weight: 0.023 g (typ.)

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Peak forward voltage	$V_{FM} (1)$	$I_{FM} = 1.0\text{ A}$ (pulse test)	—	0.88	1.0	V
Peak repetitive reverse current	I_{RRM}	$V_{RRM} = 400\text{ V}$ (pulse test)	—	—	10	μA
Thermal resistance (junction to ambient)	$R_{th} (j-a)$	Device mounted on a ceramic board (board size: 50 mm × 50 mm) (soldering land: 2 mm × 2 mm) (board thickness: 0.64 t)	—	—	60	$^\circ\text{C/W}$
		Device mounted on a glass-epoxy board (board size: 50 mm × 50 mm) (soldering land: 6 mm × 6 mm) (board thickness: 1.6 t)	—	—	110	
		Device mounted on a glass-epoxy board (board size: 50 mm × 50 mm) (soldering land: 2.1 mm × 1.4 mm) (board thickness: 1.6 t)	—	—	180	
Thermal resistance (junction to lead)	$R_{th} (j-l)$	—	—	—	16	$^\circ\text{C/W}$

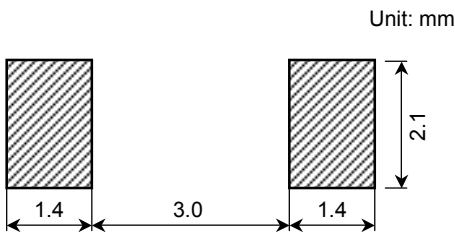
Note 2: Repetitive peak forward current waveform



Marking

Type code	Product No.
C2	CMC02

Standard Soldering Pad



Handling Precautions

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 we recommend for designing a circuit using this device.

VRRM: We recommend that the worst case voltage, including surge voltage, be no greater than 80% of the maximum rating of VRRM for a DC circuit, and no greater than 50% of that of VRRM for an AC circuit.

VRRM has a temperature coefficient of 0.1%/°C. Be sure to take this temperature coefficient into account when designing a device for use at low temperature.

IF (AV): We recommend that the worst case current be no greater than 80% of the maximum rating of IF (AV). Carry out sufficient heat design. If it is not possible to design a circuit with excellent heat radiation, set a margin by using an allowable Tamax- IF (AV) curve.

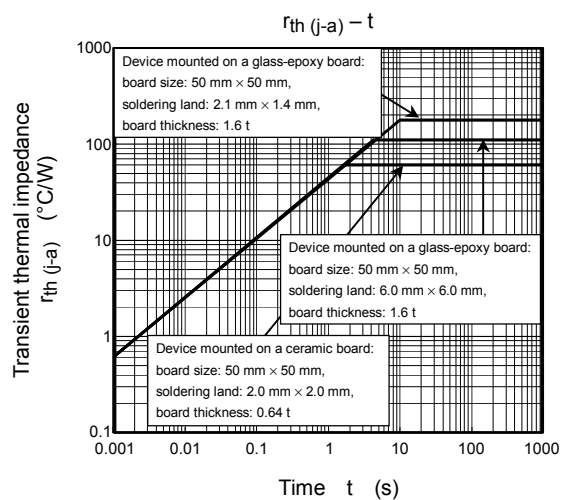
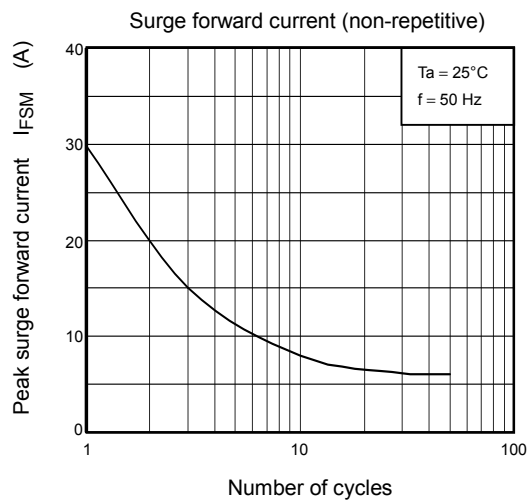
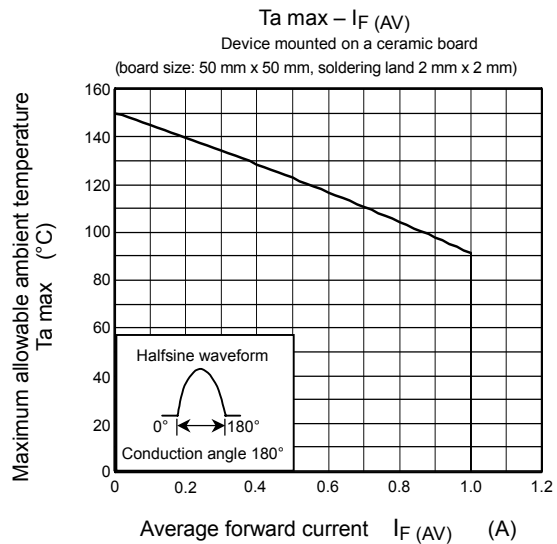
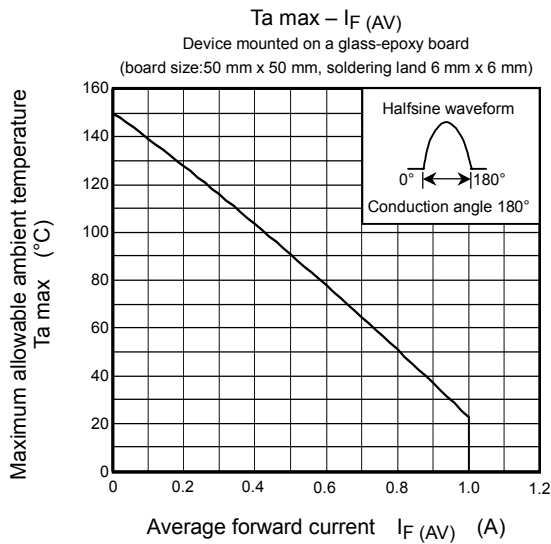
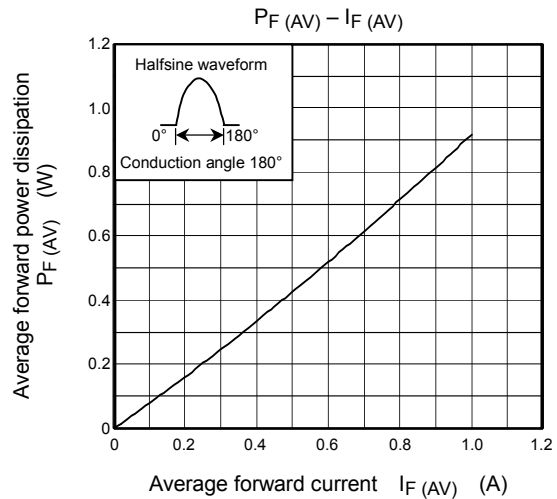
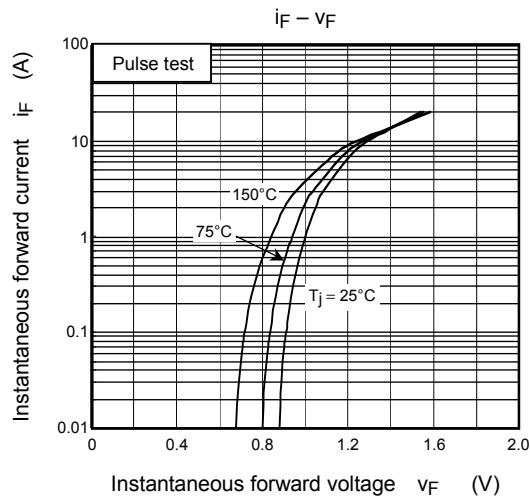
This rating applies only to a strobe flash circuit. We recommend that the worst case current be kept within the maximum rating of IFRM. The total number of repetitive currents should not exceed 7000 within the lifespan of the device.

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

For this device, we recommend a Tj of below 120°C under the worst load and heat radiation conditions.

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

Refer to the Rectifier databook for further information.



RESTRICTIONS ON PRODUCT USE

030619EAA

- The information contained herein is subject to change without notice.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of TOSHIBA or others.
- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc..
- The TOSHIBA products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These TOSHIBA products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc.. Unintended Usage of TOSHIBA products listed in this document shall be made at the customer's own risk.
- TOSHIBA products should not be embedded to the downstream products which are prohibited to be produced and sold, under any law and regulations.

AMEYA360

Components Supply Platform

Authorized Distribution Brand :



Website :

Welcome to visit www.ameya360.com

Contact Us :

➤ Address :

401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
Minhang District, Shanghai , China

➤ Sales :

Direct +86 (21) 6401-6692

Email amall@ameya360.com

QQ 800077892

Skype ameyasales1 ameyasales2

➤ Customer Service :

Email service@ameya360.com

➤ Partnership :

Tel +86 (21) 64016692-8333

Email mkt@ameya360.com