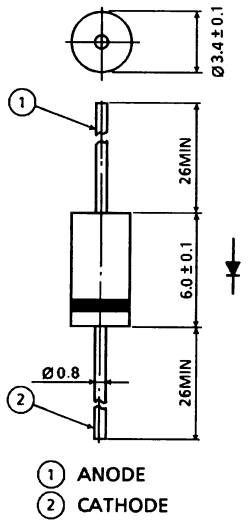
TOSHIBA Rectifier Silicon Diffused Type

1S1832

High-Speed Rectifier Applications (fast recovery)

- Average Forward Current: $I_{F\ (AV)}$ = 0.7 A (Ta = 50°C)
- Repetitive Peak Reverse Voltage: V_{RRM} = 1800 V
- Reverse Recovery Time: t_{rr} = 6.0 μs
- Plastic Mold Type

Unit: mm



JEDEC	DO-15
JEITA	SC-39
TOSHIBA	3-3B1A

Weight: 0.42 g (typ.)

Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Repetitive peak reverse voltage	V_{RRM}	1800	V
Reverse voltage (DC)	V_R	1500	V
Average forward current (Ta = 50°C)	$I_{F\ (AV)}$	0.7	A
Peak one cycle surge forward current (non-repetitive)	I_{FSM}	60 (50 Hz)	A
		66 (60 Hz)	
Junction temperature	T_j	−40 to 125	°C
Storage temperature range	T_{stg}	−40 to 125	°C

Electrical Characteristics (Ta = 25°C)

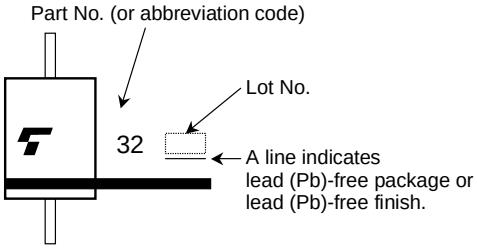
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Peak forward voltage	V_{FM}	I_{FM} = 1.5 A	—	—	2.0	V
Repetitive peak reverse current	$I_{RRM\ (1)}$	V_{RRM} = 1500 V	—	—	10	μA
	$I_{RRM\ (2)}$	V_{RRM} = 1500 V, T_j = 125°C	—	—	400	
Reverse recovery time	t_{rr}	I_F = 20 mA, I_R = 1 mA	—	—	6.0	μs

Note 1: Lead diameter not controlled in this zone to allow for flash, lead finish build-up and minor irregularities other than slugs.

Note 2: Soldering: 5 mm is the minimum to be kept between the case and the soldered part.

Note 3: Lead bending: 5 mm is the minimum to be kept from the case when bending lead wires.

Marking



Abbreviation Code	Part No.
32	1S1832

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.

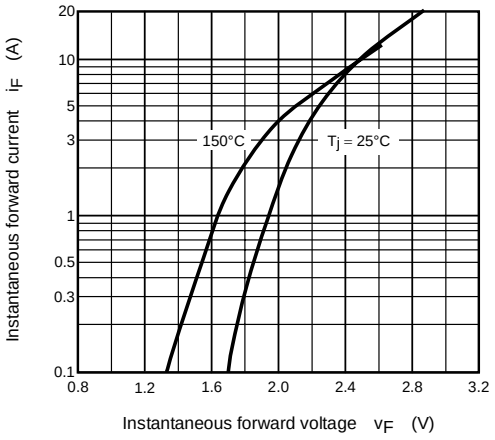
This rating specifies the non-repetitive peak current in one cycle of a 50-Hz sine wave, condition angle 180. Therefore, this is only applied for an abnormal operation, which seldom occurs during the lifespan of the device.

We recommend that a device be used at a Tj of below 100°C under the worst load and heat radiation conditions.

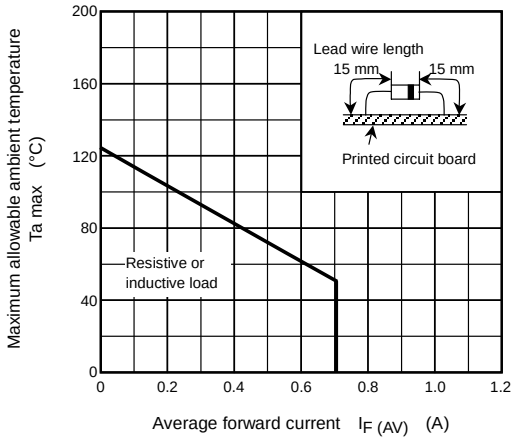
Thermal resistance between junction and ambient fluctuates depending on the device's mounting condition. When using a device, design a circuit board and a soldering land size to match the appropriate thermal resistance value.

Please refer to the Rectifiers databook for further information.

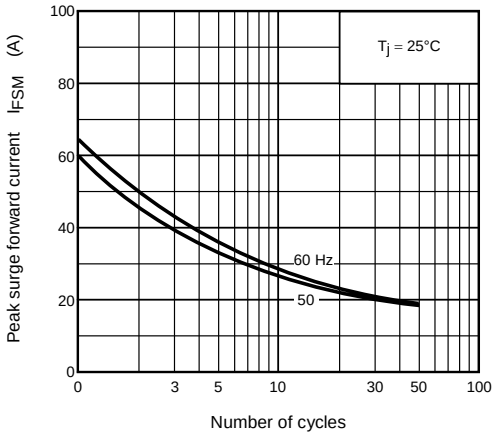
$i_F - v_F$



Ta max – $I_{F\ (AV)}$



Surge forward current (non-repetitive)



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