

SCHOTTKY RECTIFIER

10YQ045

10 Amp

Major Ratings and Characteristics

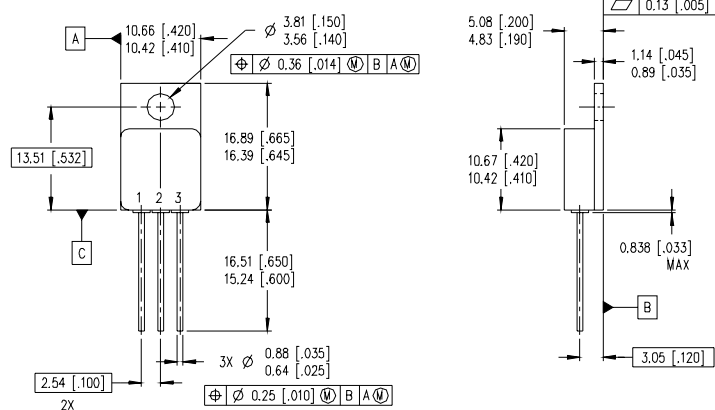
Characteristics	10YQ045	Units
$I_{F(AV)}$ Rectangular waveform	10	A
V_{RRM}	45	V
I_{FSM} @ $t_p = 8.3ms$ sine	110	A
V_F @ 10Apk, $T_J = 125^\circ C$	0.70	V
T_J, T_{stg} Operating and Storage	-55 to 150	$^\circ C$

Description/Features

The 10YQ045 Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel environments. It is packaged in the hermetic, isolated, TO-257AA package and has extremely low reverse leakage at high temperature. Full MIL-PRF-19500 quality conformance testing is available on source controlled drawings to JANTX, JANTXV levels. Typical applications include switching power supplies and resonant power converters.

- Hermetically Sealed
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long Term Reliability
- Electrically Isolated
- Glass Eyelets

CASE STYLE



NOTES:

1. DIMENSIONING & TOLERANCING PER ANSI Y14.5M-1994.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
4. OUTLINE CONFORMS TO JEDEC OUTLINE TO-257AA.

Case Outline and Dimensions — TO-257AA

Voltage Ratings

Part Number		10YQ045
V_R	Max. DC Reverse Voltage (V)	45
V_{RWM}	Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

Parameters	10YQ045	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current	11.75	A	50% duty cycle @ $T_C = 100^\circ\text{C}$, rectangular waveform
I_{FSM} Max. Peak One Cycle Non - Repetitive Surge Current	110	A	@ $t_p = 8.3$ ms sine

Electrical Specifications

Parameters	10YQ045	Units	Conditions
V_{FM} Max. Forward Voltage Drop See Fig. 1①	0.59	V	@ 4A
	0.72	V	@ 10A
	0.53	V	@ 4A
	0.70	V	@ 10A
I_{RM} Max. Reverse Leakage Current See Fig. 2 ①	0.50	mA	$T_J = 25^\circ\text{C}$
	67	mA	$T_J = 125^\circ\text{C}$
C_T Max. Junction Capacitance	775	pF	$V_R = 5V_{DC}$, (test signal range 100KHz to 1MHz) 25°C
L_S Typical Series Inductance	6.8	nH	Measured from center of bond pad to end of anode bonding wire

Thermal-Mechanical Specifications

Parameters	10YQ045	Units	Conditions
T_J Max. Junction Temperature Range	-55 to 150	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-55 to 150	$^\circ\text{C}$	
R_{thJC} Max. Thermal Resistance, Junction to Case	2.6	$^\circ\text{C/W}$	DC operation See Fig. 4 Mounting surface, smooth and greased
wt Weight (Typical)	3.3	g	
Die Description (Square)	0.125	inches	
Case Style	TO-257AA	JEDEC	

① Pulse Width < 300 μs , Duty Cycle < 2%

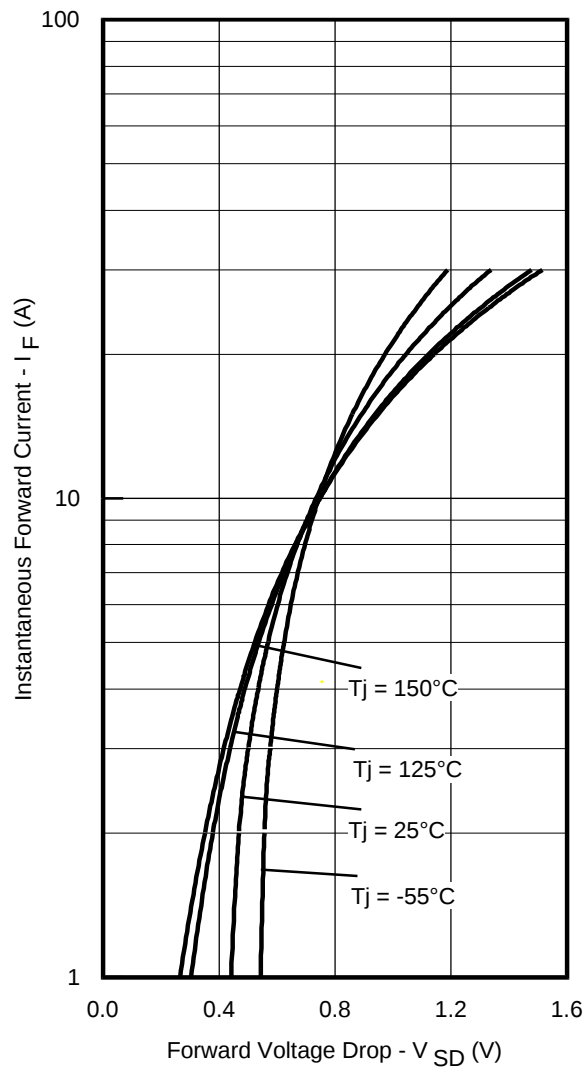


Fig. 1 - Max. Forward Voltage Drop Characteristics

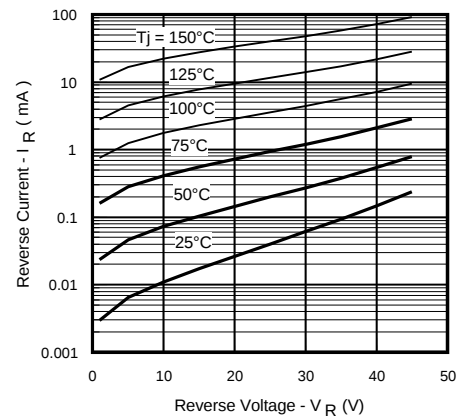


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

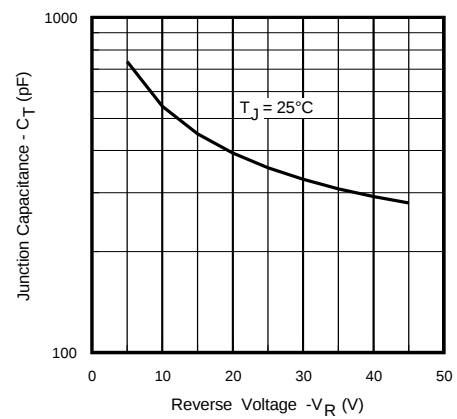
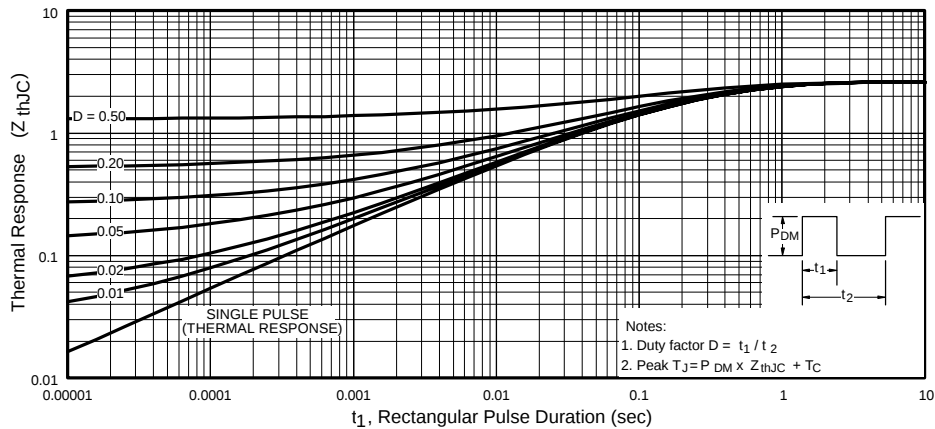
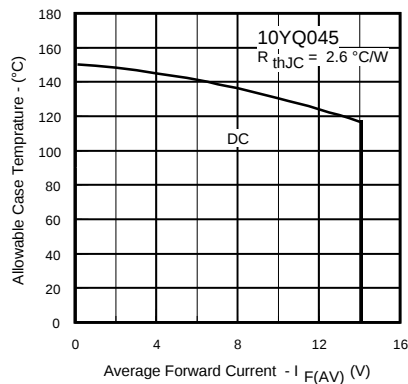


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

Fig.4 - Max. Thermal Impedance Z_{thJC} CharacteristicsFig. 5 - Max. Allowable Case Temperature Vs.
Average Forward Current