International
IOR Rectifier

PD - 93860A

SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES

10YQ045

10 Amp, 45V

Major Ratings and Characteristics

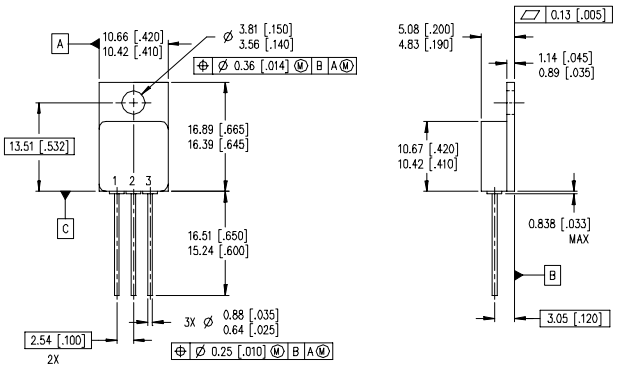
Characteristics	10YQ045	Units
$I_{F(AV)}$	10	A
V_{RRM}	45	V
I_{FSM} @ tp = 8.3ms half-sine	110	A
V_F @ 10Apk, T_J =125°C	0.70	V
T_J,T_{stg} Operating and storage	-55 to 150	°C

Description/Features

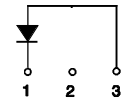
The 10YQ045 Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel environments. It is packaged in the hermetic isolated TO-257AA package. The device's forward voltage drop and reverse leakage current are optimized for the lowest power loss and the highest circuit efficiency for typical high frequency switching power supplies and resonent power converters. Full MIL-PRF-19500 quality conformance testing is available on source control drawings to TX, TXV and S levels.

- Hermetically Sealed
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long term Reliability
- Lightweight
- 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.



IR Case Style TO-257AA

01/26/01

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	Limits	Units	Conditions
$I_{F(AV)}$	Max. Average Forward Current See Fig. 5	10	A	50% duty cycle @ T_C = 109°C, square waveform
I_{FSM}	Max. Peak One Cycle Non - Repetitive Surge Current	110	A	@ t_p = 8.3 ms half-sine

Electrical Specifications

	Parameters	Limits	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop See Fig. 1①	0.74	V	@ 10A	T_J = -55°C
		0.95	V	@ 20A	
		0.73	V	@ 10A	T_J = 25°C
		1.02	V	@ 20A	
		0.70	V	@ 10A	T_J = 125°C
		1.10	V	@ 20A	
I_{RM}	Max. Reverse Leakage Current See Fig. 2①	0.50	mA	T_J = 25°C	V_R = rated V_R
		23	mA	T_J = 100°C	
		67	mA	T_J = 125°C	
C_T	Max. Junction Capacitance	775	pF	V_R = 5V_{DC} (1MHz, 25°C)	
L_S	Typical Series Inductance	9.8	nH	Measured from anode lead to cathode lead 6mm (0.025 in.) from package	

Thermal-Mechanical Specifications

	Parameters	Limits	Units	Conditions
T_J	Max.Junction Temperature Range	-55 to 150	°C	
T_{stg}	Max. Storage Temperature Range	-55 to 150	°C	
R_{thJC}	Max. Thermal Resistance, Junction to Case	2.6	°C/W	DC operation See Fig. 4
wt	Weight (Typical)	3.3	g	
	Die Size (Typical)	125X125	mils	
	Case Style	TO-257AA		

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

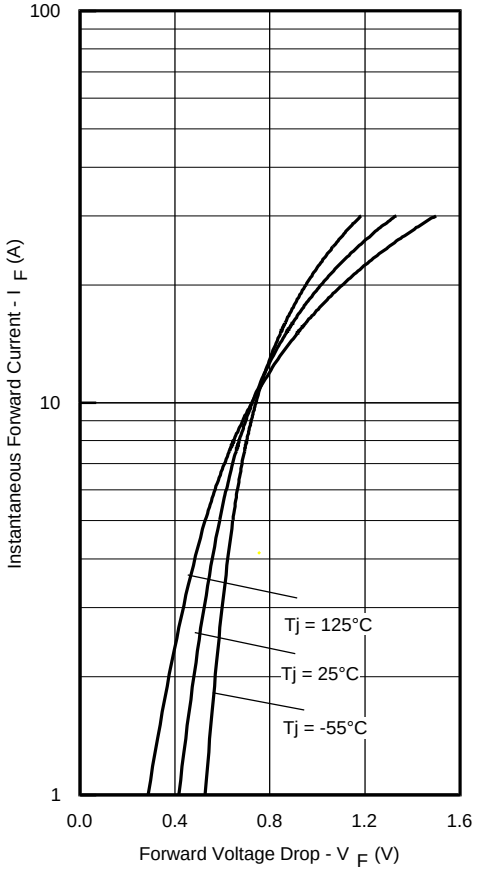


Fig. 1 - Max. Forward Voltage Drop Characteristics

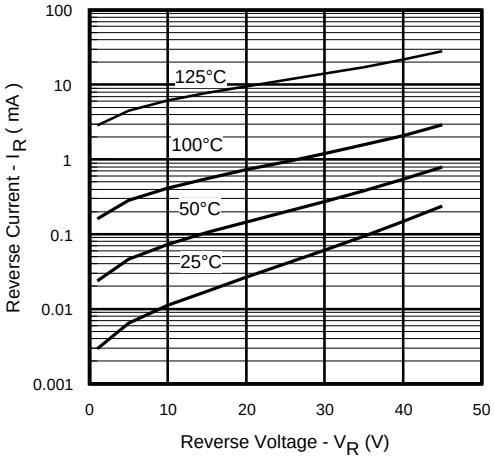


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

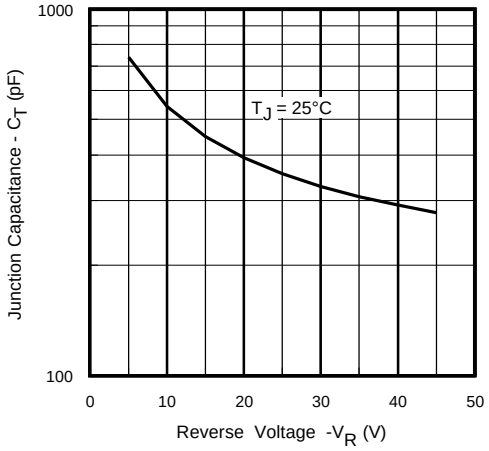


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

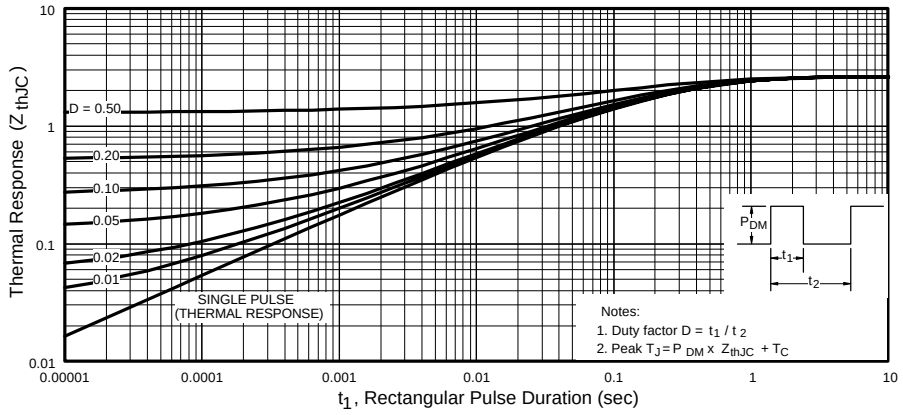


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics

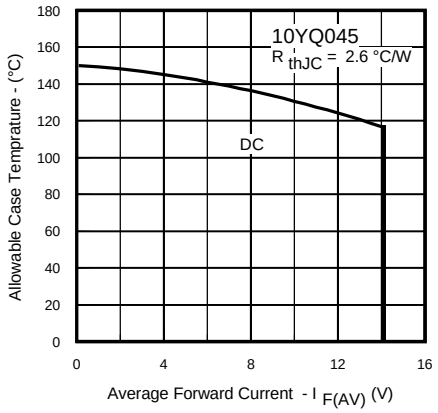


Fig. 5 - Max. Allowable Case Temperature Vs.
Average Forward Current

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