

**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
$I_{FSM}$ @ $t_p = 8.3ms$ half-sine	110	A
$V_F$ @ $10A_{pk}$ , $T_J = 125^\circ C$	0.70	V
$T_J, T_{stg}$ Operating and storage	-55 to 150	$^\circ C$

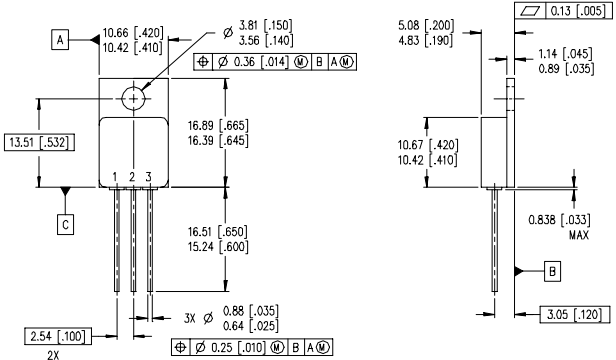
**Description/Features**

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. 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 resonant 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**

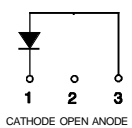




**NOTES:**

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**



CATHODE OPEN ANODE

**Voltage Ratings**

Part number	10YQ045
V <sub>R</sub> Max. DC Reverse Voltage (V)	45
V <sub>RWM</sub> Max. Working Peak Reverse Voltage (V)	

**Absolute Maximum Ratings**

Parameters	Limits	Units	Conditions
I <sub>F(AV)</sub> Max. Average Forward Current See Fig. 5	10	A	50% duty cycle @ T <sub>C</sub> = 109°C, square waveform
I <sub>FSM</sub> Max. Peak One Cycle Non - Repetitive Surge Current	110	A	@ t <sub>p</sub> = 8.3 ms half-sine

**Electrical Specifications**

Parameters	Limits	Units	Conditions
V <sub>FM</sub> Max. Forward Voltage Drop See Fig. 1①	0.74	V	@ 10A T <sub>J</sub> = -55°C
	0.95	V	@ 20A
	0.73	V	@ 10A T <sub>J</sub> = 25°C
	1.02	V	@ 20A
	0.70	V	@ 10A T <sub>J</sub> = 125°C
I <sub>RM</sub> Max. Reverse Leakage Current See Fig. 2①	0.50	mA	T <sub>J</sub> = 25°C
	23	mA	T <sub>J</sub> = 100°C
	67	mA	T <sub>J</sub> = 125°C
C <sub>T</sub> Max. Junction Capacitance	775	pF	V <sub>R</sub> = 5V <sub>DC</sub> ( 1MHz, 25°C)
L <sub>S</sub> 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 <sub>J</sub> Max. Junction Temperature Range	-55 to 150	°C	
T <sub>stg</sub> Max. Storage Temperature Range	-55 to 150	°C	
R <sub>thJC</sub> 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 &lt; 300μs, Duty Cycle &lt; 2%

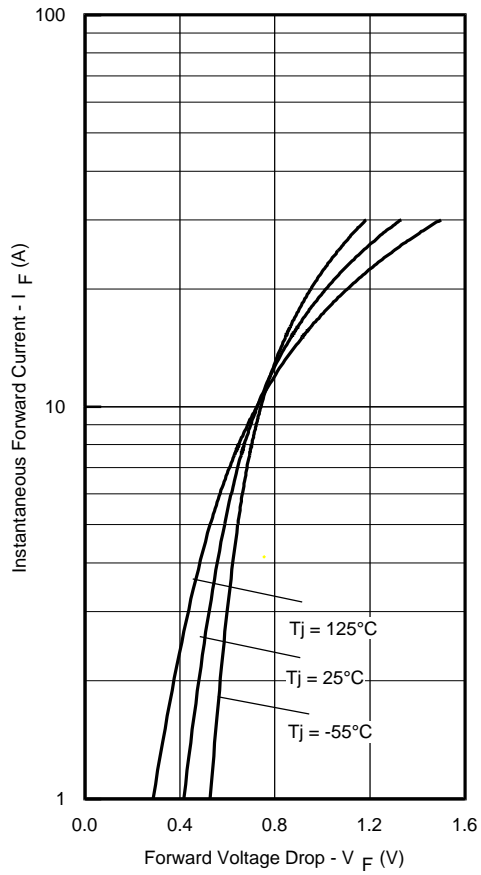


Fig. 1 - Max. Forward Voltage Drop Characteristics

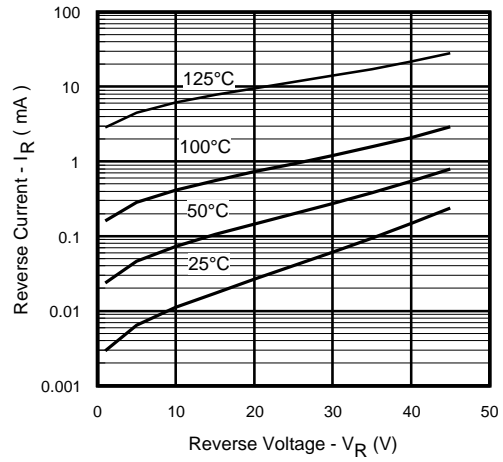


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

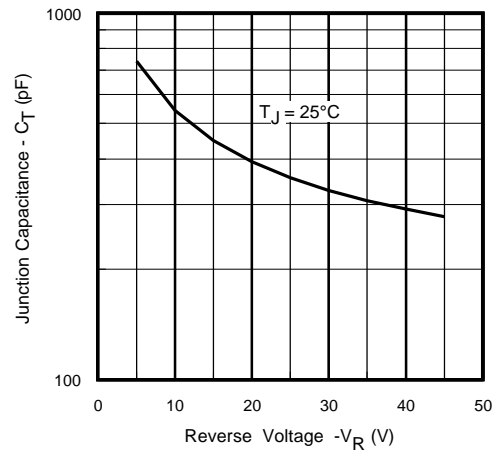


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

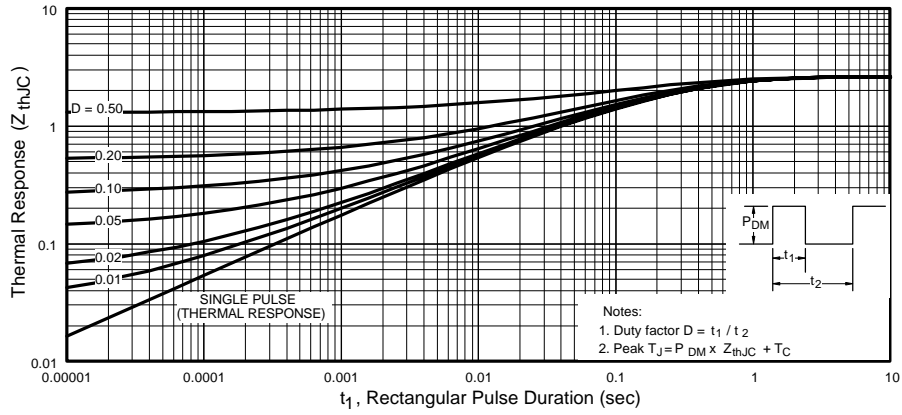


Fig. 4 - Max. Thermal Impedance  $Z_{thJC}$  Characteristics

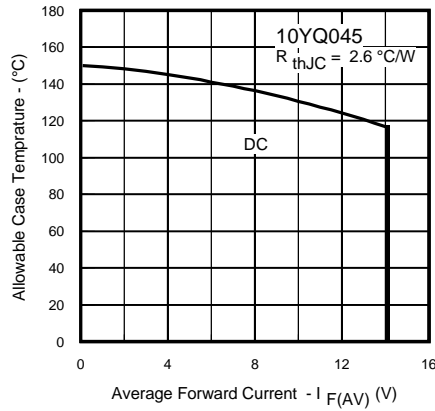


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current