

SCHOTTKY RECTIFIER

22DGQ045

25 Amp

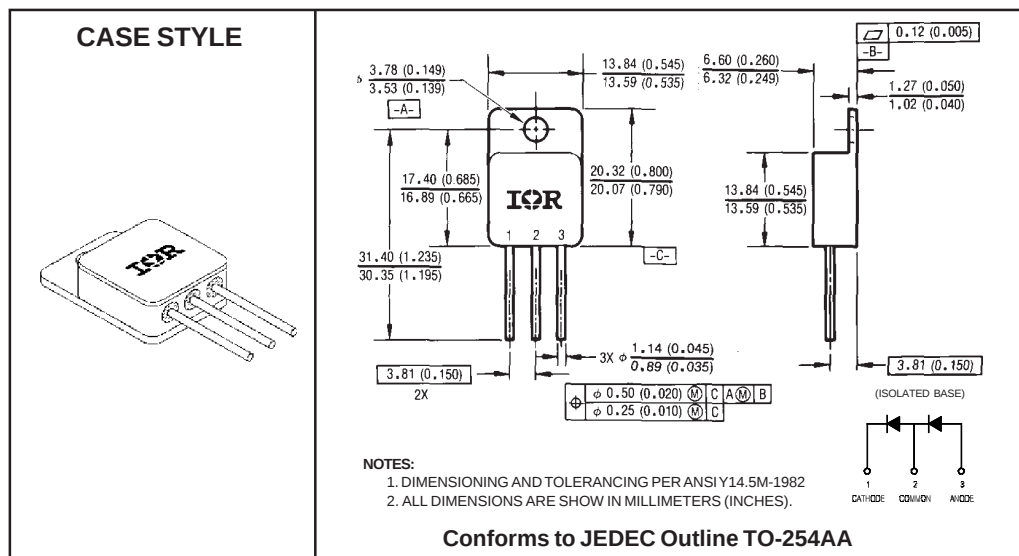
Major Ratings and Characteristics

Characteristics	22DGQ045	Units
$I_{F(AV)}$ Rectangular Waveform	25	A
V_{RRM} (Per Leg)	45	V
I_{FSM} @ $t_p = 8.3ms$ sine	300	A
V_F @ 25Apk, $T_J = 125^\circ C$ (Per Leg)	0.76	V
T_J, T_{stg} Operating and Storage	-55 to 150	$^\circ C$

Description/Features

The 22DGQ045 (series doubler) Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel environments. It is packaged in the hermetic, isolated, TO-254AA 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, or JANS levels. Typical applications include switching power supplies and resonant power converters.

- Hermetically Sealed
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long Term Reliability
- Schottky Diodes Connected in Series
- Electrically Isolated
- Ceramic Eyelets



Voltage Ratings

Part Number	22DGQ045
V _R Max. DC Reverse Voltage (V) (Per Leg)	45
V _{RWM} Max. Working Peak Reverse Voltage (V) (Per Leg)	

Absolute Maximum Ratings

Parameters	22DGQ045	Units	Conditions
I _{F(AV)} Max. Average Forward Current See Fig. 4	25	A	50% duty cycle @ T _C = 100°C, rectangular waveform
I _{FSM} Max. Peak One Cycle Non - Repetitive Surge Current (Per Leg)	300	A	@ t _p = 8.3 ms sine

Electrical Specifications

Parameters	22DGQ045	Units	Conditions
V _{FM} Max. Forward Voltage Drop (Per Leg) See Fig. 1 ①	0.82	V	@ 25A T _J = 25°C
	1.18	V	@ 50A
	0.76	V	@ 25A T _J = 125°C
	1.11	V	@ 50A
I _{RM} Max. Reverse Leakage Current (Per Leg) See Fig.2 ①	0.5	mA	T _J = 25°C
	20	mA	T _J = 125°C V _R = rated V _R
C _T Max. Junction Capacitance (Per Leg)	1400	pF	V _R = 5V _{DC} , (test signal range 100KHz to 1MHz) 25°C
L _S Typical Series Inductance (Per Leg)	8.7	nH	Measured lead to lead 5mm from package body

Thermal-Mechanical Specifications

Parameters	22DGQ045	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 (Per Leg)	1.67	°C/W	DC operation See Fig. 5
R _{thJC} Max. Thermal Resistance, Junction to Case (Per Package)	1.67	°C/W	DC operation
R _{thCS} Typical Thermal Resistance, Case to Heatsink	0.21	°C/W	Mounting surface, smooth and greased
w _t Weight (Typical)	9.3	g	
Die Description (Square)	0.15	inches	
Case Style	TO-254AA		JEDEC

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

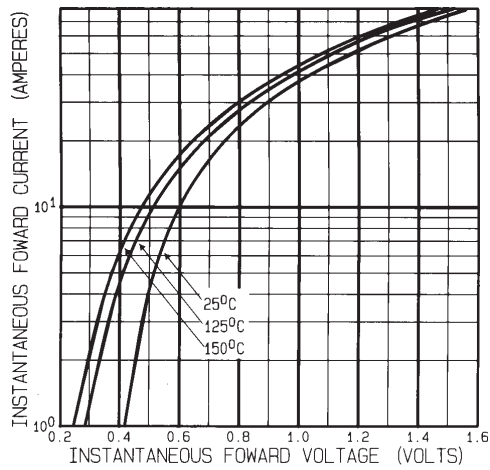


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

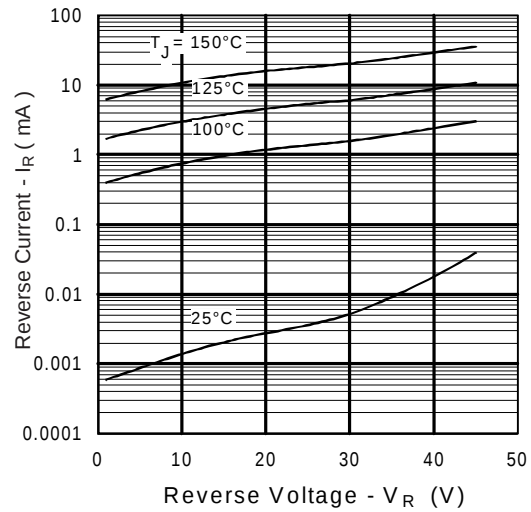


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

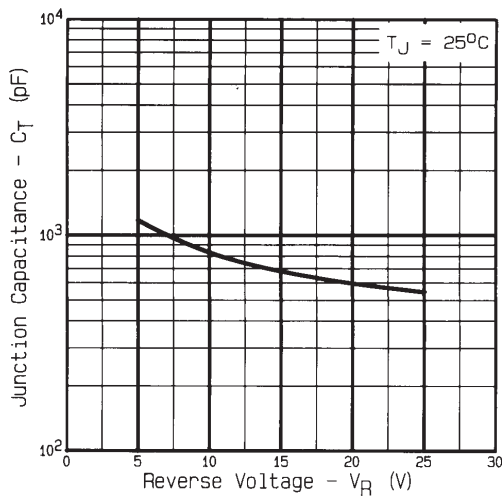


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

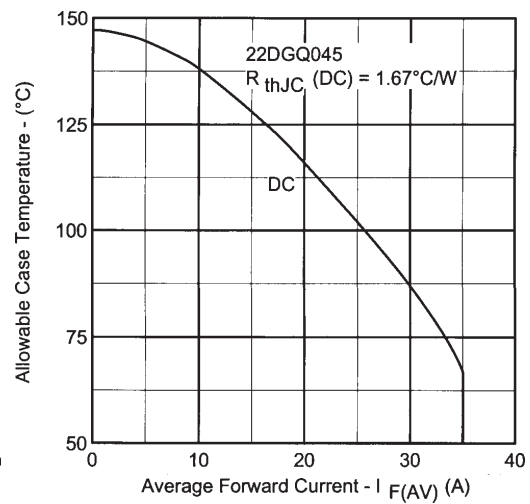
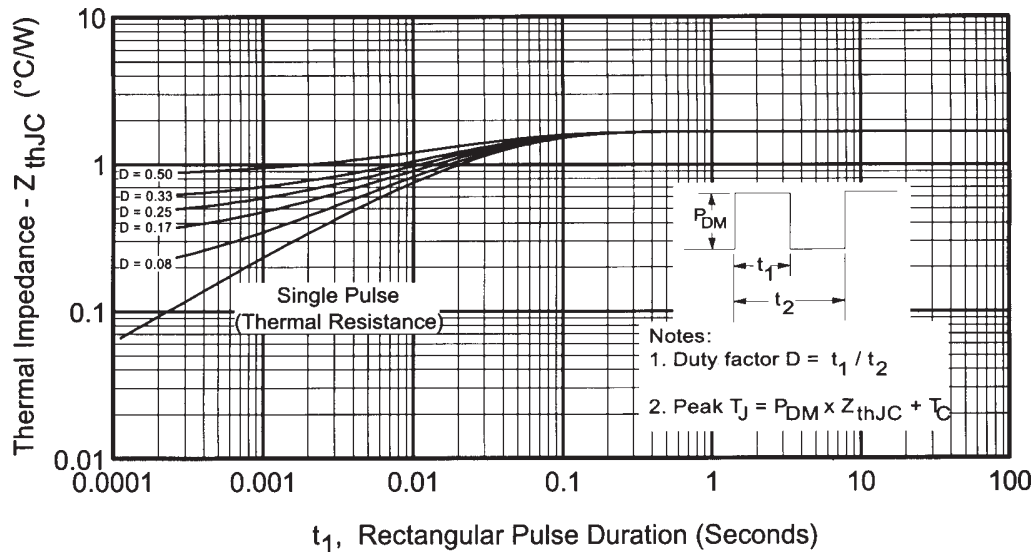


Fig. 4 - Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

Fig.5 - Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)International
IOR Rectifier**WORLD HEADQUARTERS:** 233 Kansas St., El Segundo, California 90245, Tel: (310) 252-7105**IR GREAT BRITAIN:** Hurst Green, Oxted, Surrey RH8 9BB, UK Tel: ++ 44 1883 732020**IR CANADA:** 15 Lincoln Court, Brampton, Ontario L6T3Z2, Tel: (905) 453 2200**IR GERMANY:** Saalburgstrasse 157, 61350 Bad Homburg Tel: ++ 49 6172 96590**IR ITALY:** Via Liguria 49, 10071 Borgaro, Torino Tel: ++ 39 11 451 0111**IR JAPAN:** K&H Bldg., 2F, 30-4 Nishi-Ikebukuro 3-Chome, Toshima-Ku, Tokyo Japan 171 Tel: 81 3 3983 0086**IR SOUTHEAST ASIA:** 1 Kim Seng Promenade, Great World City West Tower, 13-11, Singapore 237994 Tel: ++ 65 838 4630**IR TAIWAN:** 16 Fl. Suite D. 207, Sec. 2, Tun Haw South Road, Taipei, 10673, Taiwan Tel: 886-2-2377-9936

Data and specifications subject to change without notice. 12/99