

SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES

12CLQ150

35A, 150V

Major Ratings and Characteristics

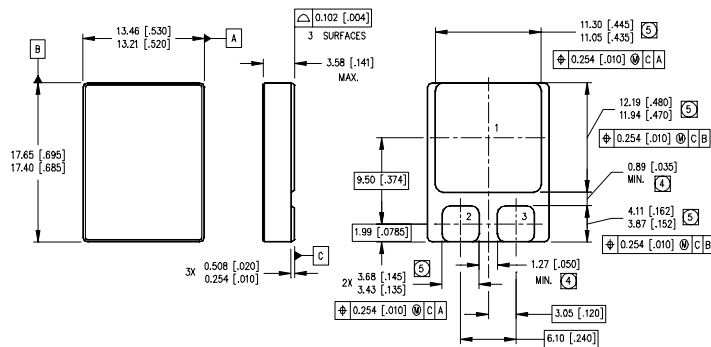
Characteristics	12CLQ150	Units
$I_{F(AV)}$ Rectangular waveform	35	A
V_{RRM} (Per Leg)	150	V
I_{FSM} @ $t_p = 8.3ms$ half-sine (Per Leg)	200	A
V_F @ 15Apk, $T_J = 125^\circ C$ (Per Leg)	0.86	V
T_J, T_{stg} Operating and storage	-55 to 150	$^\circ C$

Description/Features

The 12CLQ150 center tap Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel environments. It is packaged in the hermetic surface mount SMD-1 ceramic 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 controlled drawings to TX, TXV and S levels.

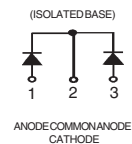
- Hermetically Sealed
- Center Tap
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long Term Reliability
- Surface Mount
- Lightweight

CASE STYLE



NOTES:

1. DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
4. DIMENSION INCLUDES METALLIZATION FLASH.
5. DIMENSION DOES NOT INCLUDE METALLIZATION FLASH.



IR Case Style SMD-1

Voltage Ratings

Part number	12CLQ150
V_R Max. DC Reverse Voltage (V) (Per Leg)	150
V_{RWM} Max. Working Peak Reverse Voltage (V) (Per Leg)	

Absolute Maximum Ratings

Parameters	Limits	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current See Fig. 5	35	A	50% duty cycle @ $T_C = 100^\circ\text{C}$, rectangular waveform
I_{FSM} Max. Peak One Cycle Non - Repetitive Surge Current (Per Leg)	200	A	@ $t_p = 8.3$ ms half-sine

Electrical Specifications

Parameters	Limits	Units	Conditions
V_{FM} Max. Forward Voltage Drop (Per Leg) See Fig. 1 ①	1.13	V	@ 15A
	1.6	V	@ 35A
	0.86	V	@ 15A
	1.20	V	@ 35A
I_{RM} Max. Reverse Leakage Current (Per Leg) See Fig. 2 ①	0.5	mA	$T_J = 25^\circ\text{C}$
	15	mA	$T_J = 125^\circ\text{C}$
C_T Max. Junction Capacitance (Per Leg)	340	pF	$V_R = 5V_{DC}$ (1MHz, 25°C)
L_S Typical Series Inductance (Per Leg)	5.9	nH	Measured from center of cathode pad to center of anode pad

Thermal-Mechanical Specifications

Parameters	Limits	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 (Per Leg)	1.67	$^\circ\text{C/W}$	DC operation See Fig. 4
R_{thJC} Max. Thermal Resistance, Junction to Case (Per Package)	0.83	$^\circ\text{C/W}$	DC operation
wt Weight (Typical)	2.6	g	
Die Size	125X125	mils	
Case Style	SMD-1		

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

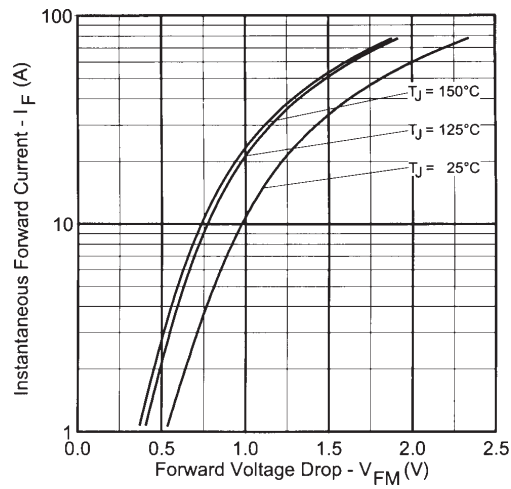


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

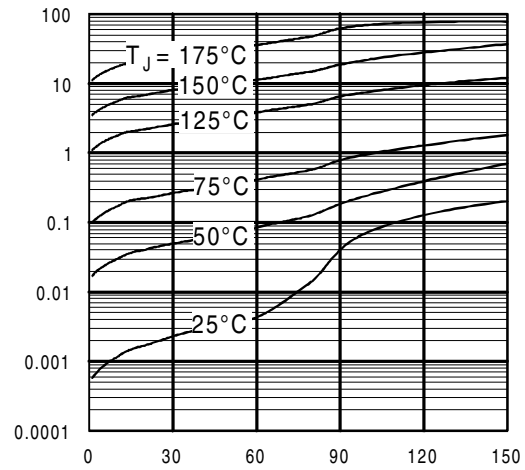


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

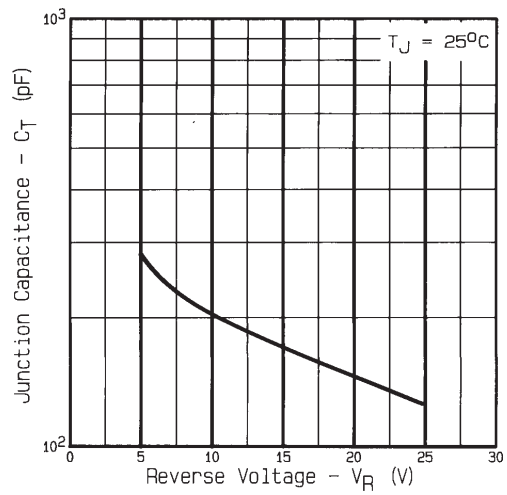


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

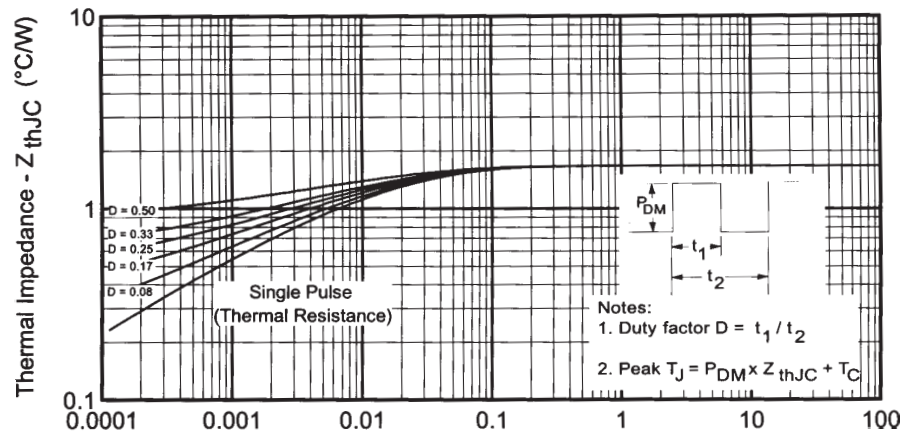
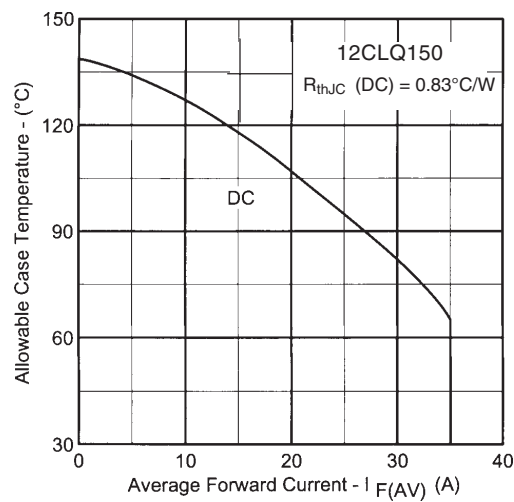
Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)

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

International
IR Rectifier

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Data and specifications subject to change without notice. 02/02

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