

30CLJQ150

PD-93950E

Schottky Rectifier High Efficiency Series Surface Mount (SMD-0.5) 150V, 30A

Features

- Hermetically sealed
- Center tap
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Surface mount
- Light weight
- ESD rating: Class 3B per MIL-STD-750, Method 1020

Potential Applications

- DC-DC converter
- Protection circuits

Product Validation

Fully qualified according to MIL-PRF-19500 for space applications

Description

The 1N7058CCU3 center tap Schottky rectifier has been expressly designed to meet the rigorous requirements of high reliability environments. It is packaged in the hermetic surface mount SMD-0.5 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 control drawings to TX, TXV and S quality levels.

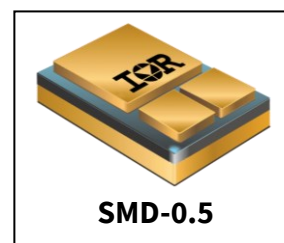
Ordering Information

Table 1 **Ordering options**

Part number	Package	Screening Level
30CLJQ150	SMD-0.5	COTS
JANTX1N7058CCU3	SMD-0.5	JANTX
JANTXV1N7058CCU3	SMD-0.5	JANTXV
JANS1N7058CCU3	SMD-0.5	JANS

Product Summary

- V_{RRM} : 150V
- $I_{F(AV)}$: 30A
- V_F @ 15Apk, $T_J = 125^\circ\text{C}$: 0.85V (Per Leg)
- I_{FSM} @ $t_p = 8.3\text{ms half-sine}$: 130A (Per Leg)
- REF: MIL-PRF-19500/731



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Absolute Maximum Ratings

1 Absolute Maximum Ratings

Table 2 Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
V_R	Max. DC reverse voltage (Per Leg)	150	V
V_{RWM}	Max. Working peak reverse voltage) (Per Leg)	150	V
$I_{F(AV)}$	Max. average forward current - Refer to Fig. 5 ¹ (Per Leg)	15	A
I_{FSM}	Max. peak one cycle non-repetitive surge current ² (Per Leg)	130	A
T_J T_{STG}	Operating Junction and Storage Temperature Range	-65 to 150	°C
	Weight	1.0 (Typical)	g

¹ 50% duty cycle @ $T_c = 92^\circ\text{C}$, square waveform² @ $t_p = 8.3\text{ms}$ half-sine

Device Characteristics

2 Device Characteristics

2.1 Electrical Characteristics

Table 3 Electrical Characteristics

Symbol	Parameter	Max.	Unit	Test Conditions	
V _F	Max. Forward Voltage Drop See Fig. 1 ¹ (Per Leg)	1.06	V	@7.5A	T _J = -55°C
		1.23	V	@15A	
		1.05	V	@7.5A	T _J = 25°C
		1.20	V	@15A	
		0.72	V	@7.5A	T _J = 125°C
		0.85	V	@15A	
I _R	Max. Reverse Leakage Current See Fig. 2 ¹ (Per Leg)	0.02	mA	T _J = 25°C	V _R = rated V _R
		7.0	mA	T _J = 125°C	
C _J	Max. Junction Capacitance (Per Leg)	200	pF	V _R = 5V _{DC} (1MHz, 25°C)	
L _S	Series Inductance (Per Leg)	4.8(Typical)	nH	Measured from center of cathode pad to center of anode pad	

2.2 Thermal-Mechanical Specifications

Table 4 Thermal-Mechanical Specifications

Symbol	Parameter	Max.	Unit	Test Conditions
$R_{\theta JC}$	Max. Thermal Resistance, Junction to Case (Per Leg)	3.5	$^\circ\text{C/W}$	DC operation See Fig. 4
$R_{\theta JC}$	Max. Thermal Resistance, Junction to Case (Per Package)	1.75	$^\circ\text{C/W}$	DC operation
	Die Size (Typical)	84 x 84	mils	

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

Electrical Characteristics Curves

3 Electrical Characteristics Curves

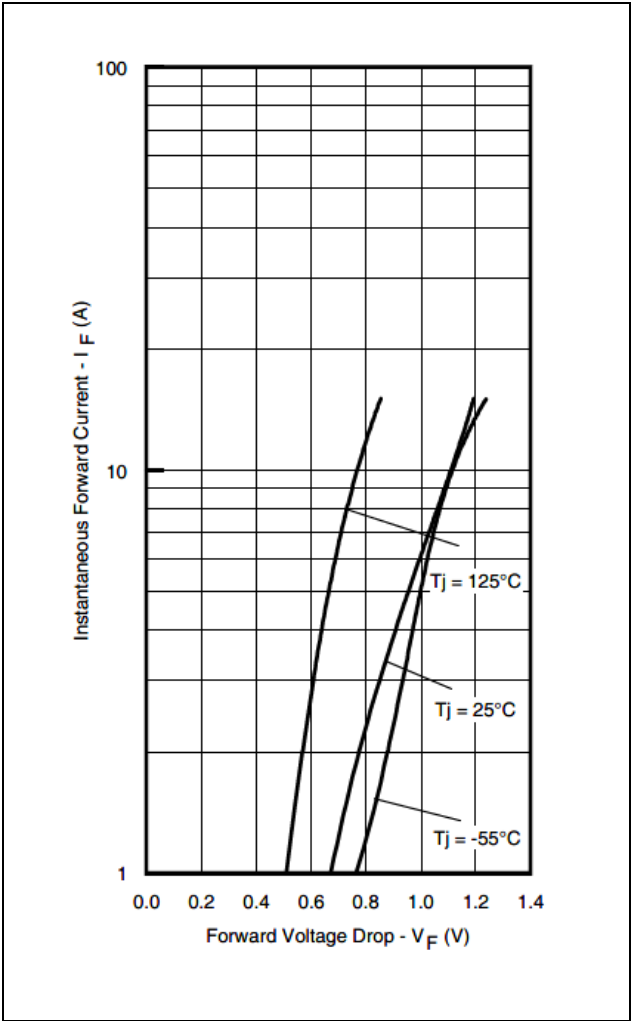


Figure 1 Maximum Forward Voltage Drop Characteristics (Per Leg)

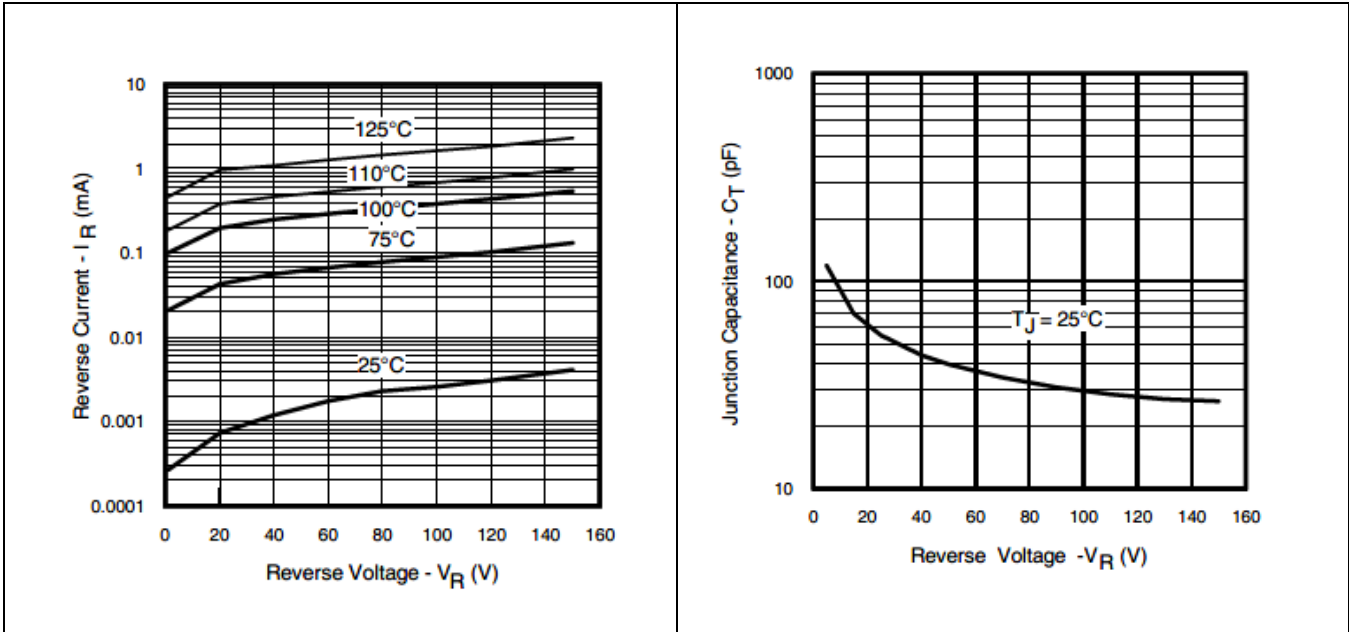


Figure 2 Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

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

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Electrical Characteristics Curves

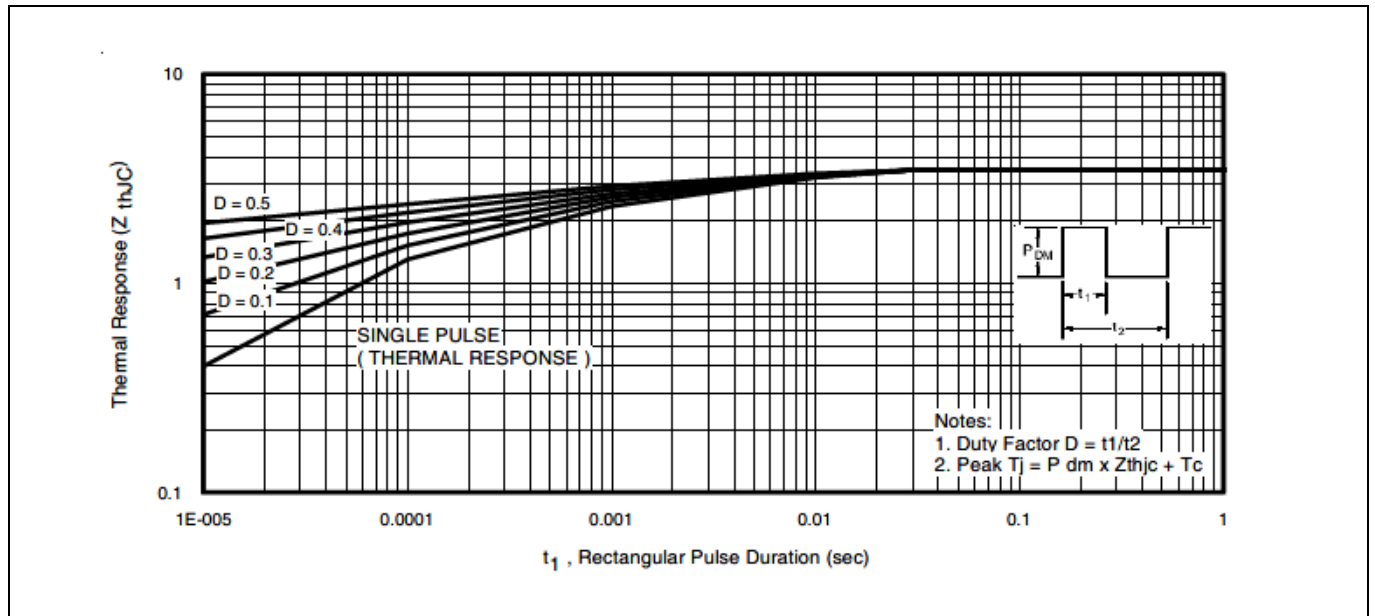


Figure 4 Maximum Thermal Impedance Z_{thJC} Characteristics (Per Leg)

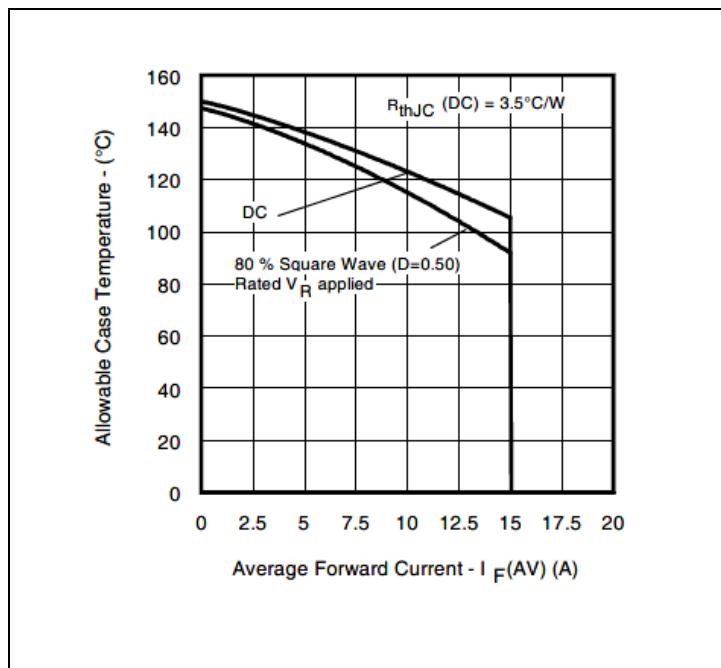


Figure 5 Maximum Allowable Case Temperature Vs. Average Forward Current (Per Leg)

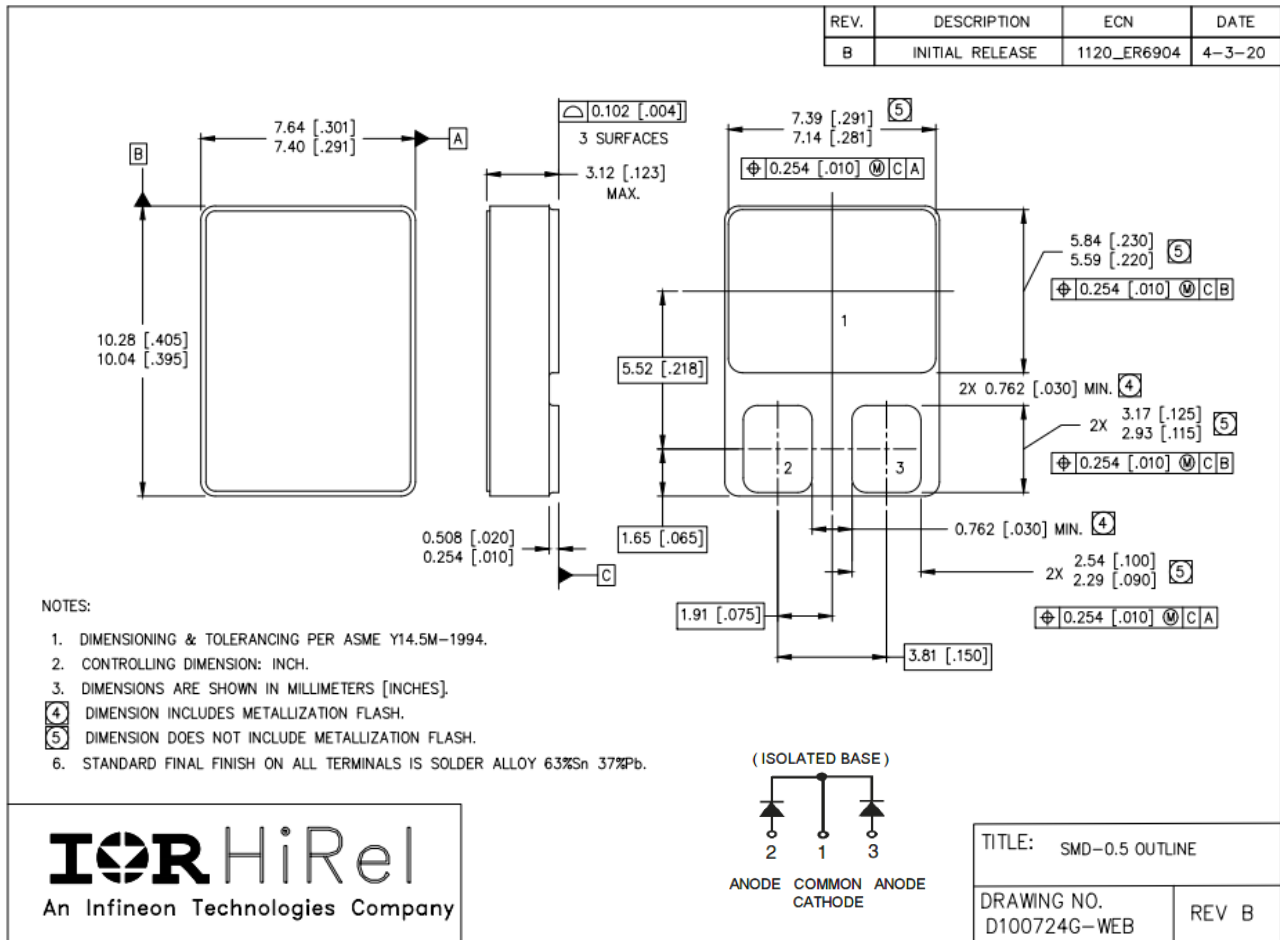
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Package Outline

4 Package Outline

Note: For the most updated package outline, please see the website: [SMD-0.5](#)



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Revision history

Revision history

Document version	Date of release	Description of changes
	08/03/2000	Final datasheet (PD-93950)
Rev A	08/18/2000	Updated Fig 1 –page5
Rev B	09/22/2000	Updated part number from 15CLJQ150 to 30CLJQ150
Rev C	06/13/2008	Updated per ECN-16062
Rev D	10/03/2012	Added ESD -page1
Rev E	08/27/2024	Updated per ECN-1120-10064

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