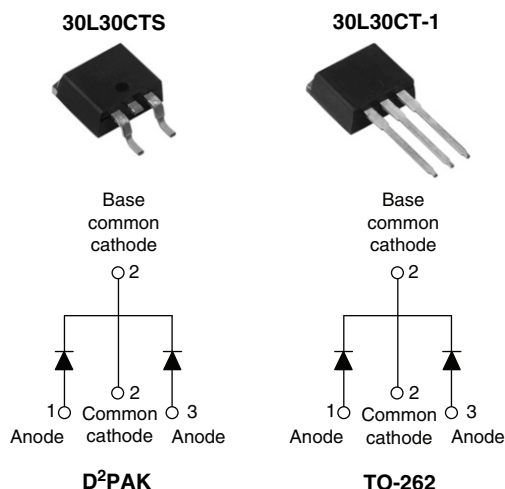


Schottky Rectifier, 2 x 15 A



FEATURES

- 150 °C T_J operation
- Center tap configuration
- Very low forward voltage drop
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Designed and qualified for Q101 level

DESCRIPTION

This center tap Schottky rectifier has been optimized for very low forward voltage drop, with moderate leakage. The proprietary barrier technology allows for reliable operation up to 150 °C junction temperature. Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

PRODUCT SUMMARY

I _{F(AV)}	2 x 15 A
V _R	30 V

MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES	UNITS
I _{F(AV)}	Rectangular waveform	30	A
V _{RRM}		30	V
V _F	15 Apk, T _J = 125 °C (per leg)	0.37	
T _J	Range	- 55 to 150	°C

VOLTAGE RATINGS

PARAMETER	SYMBOL	30L30CTS 30L30CT-1	UNITS
Maximum DC reverse voltage	V _R	30	V
Maximum working peak reverse voltage	V _{RWM}		

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum average forward current	I _{F(AV)}	50 % duty cycle at T _C = 140 °C, rectangular waveform	30	A
per device			15	
Maximum peak one cycle non-repetitive surge current	I _{FSM}	5 μs sine or 3 μs rect. pulse	1450	
		10 ms sine or 6 ms rect. pulse	220	
Non-repetitive avalanche energy per leg	E _{AS}	T _J = 25 °C, I _{AS} = 2 A, L = 7.5 mH	15	mJ
Repetitive avalanche current per leg	I _{AR}	Current decaying linearly to zero in 1 μs Frequency limited by T _J maximum V _A = 1.5 x V _R typical	2	A

ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop per leg	$V_{FM}^{(1)}$	15 A	$T_J = 25\text{ }^{\circ}\text{C}$	0.46	V
		30 A		0.57	
		15 A	$T_J = 125\text{ }^{\circ}\text{C}$	0.37	
		30 A		0.50	
Maximum reverse leakage current per leg	$I_{RM}^{(1)}$	$T_J = 25\text{ }^{\circ}\text{C}$	$V_R = \text{Rated } V_R$	1.50	mA
		$T_J = 125\text{ }^{\circ}\text{C}$		350	
Maximum junction capacitance per leg	C_T	$V_R = 5\text{ }V_{DC}$ (test signal range 100 kHz to 1 MHz) $25\text{ }^{\circ}\text{C}$		1500	pF
Typical series inductance per leg	L_S	Measured lead to lead 5 mm from package body		8.0	nH
Maximum voltage rate of change	dV/dt	Rated V_R		10 000	V/ μ s

Note

(1) Pulse width < 300 μ s, duty cycle < 2 %

THERMAL - MECHANICAL SPECIFICATIONS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction and storage temperature range	T _J , T _{Stg}		- 55 to 150	°C
Maximum thermal resistance, junction to case per leg	R _{thJC}	DC operation	1.5	°C/W
Maximum thermal resistance, junction to case per package			0.8	
Approximate weight			2	g
			0.07	oz.
Mounting torque	minimum		6 (5)	kgf · cm
	maximum		12 (10)	(lbf · in)
Marking device		Case style D ² PAK	30L30CTS	
		Case style TO-262	30L30CT-1	

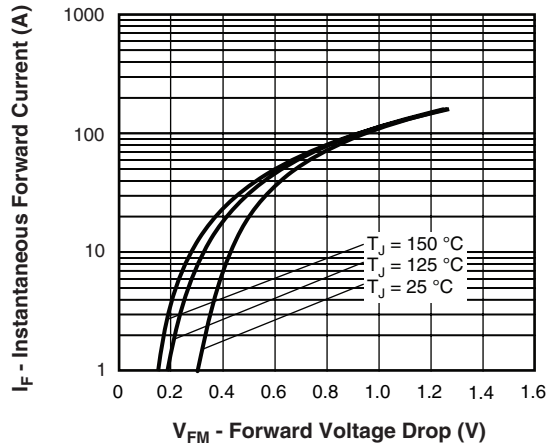


Fig. 1 - Maximum Forward Voltage Drop Characteristics

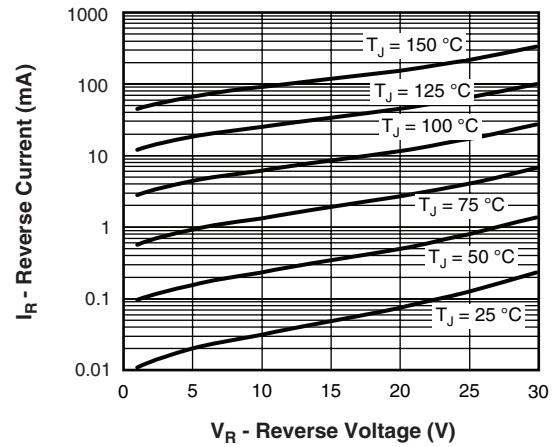


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

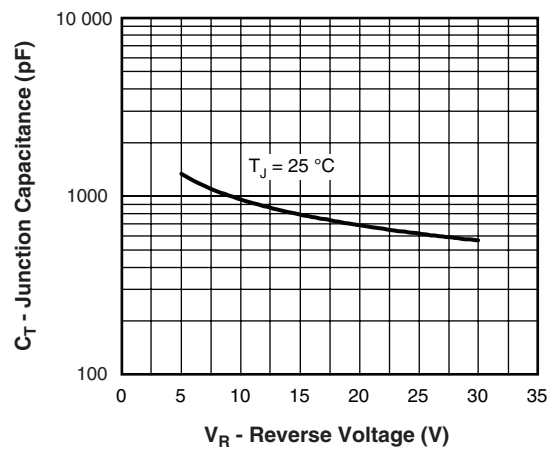


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

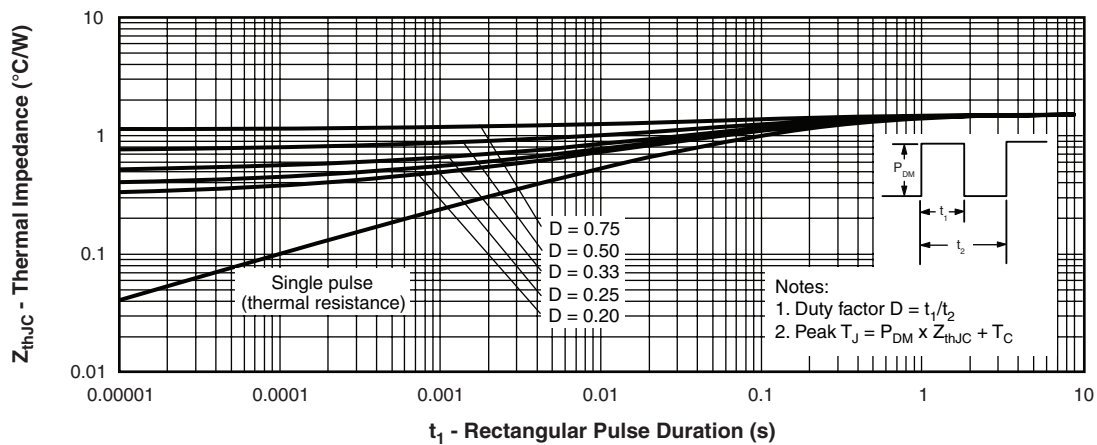


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

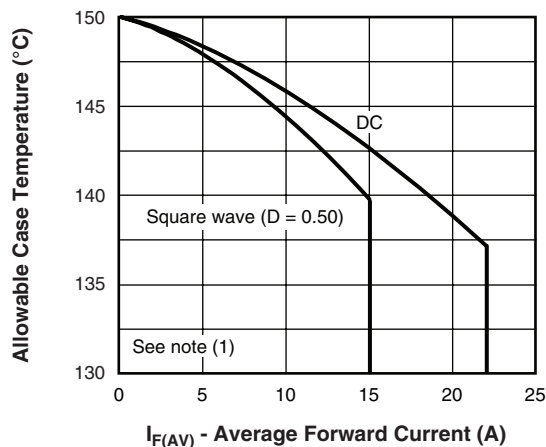


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current

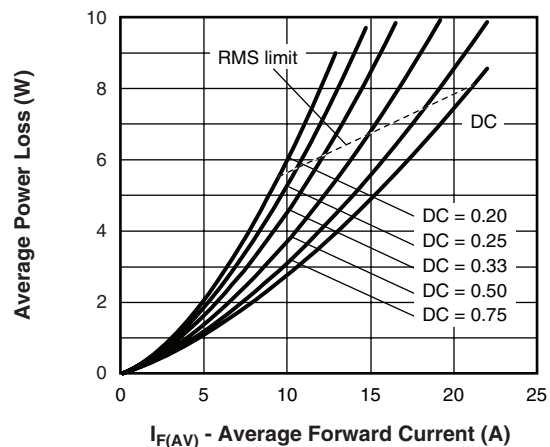


Fig. 6 - Forward Power Loss Characteristics

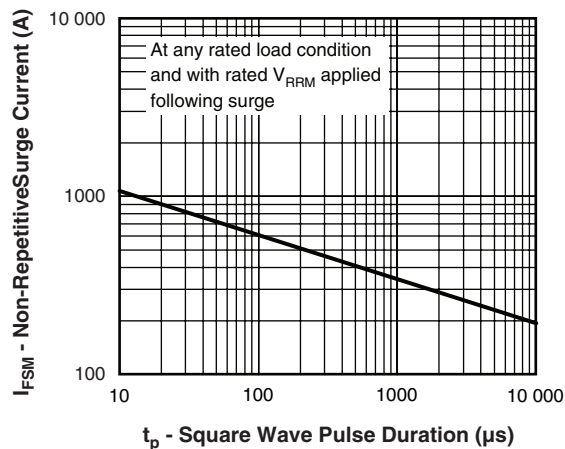


Fig. 7 - Maximum Non-Repetitive Surge Current (Per Leg)

Note

- (1) Formula used: $T_C = T_J - P_d \times R_{thJC}$;
 P_d = Forward power loss = $I_{F(AV)} \times V_{FM}$ at $(I_{F(AV)}/D)$ (see fig. 6)

**ORDERING INFORMATION TABLE**

Device code	30	L	30	C	T	S	TRL	-
	①	②	③	④	⑤	⑥	⑦	⑧

- | | | |
|----------|---|--------------------------------------------------------------------------------------------------------------|
| 1 | - | Current rating (30 A) |
| 2 | - | L = Low V_F |
| 3 | - | Voltage rating (30 = 30 V) |
| 4 | - | Circuit configuration:
C = Common cathode |
| 5 | - | T = TO-220 |
| 6 | - | • S = D ² PAK
• -1 = TO-262 |
| 7 | - | • None = Tube (50 pieces)
• TRL = Tape and reel (left oriented)
• TRR = Tape and reel (right oriented) |
| 8 | - | • None = Standard production
• PbF = Lead (Pb)-free |

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95014
Part marking information	http://www.vishay.com/doc?95008
Packaging nformation	http://www.vishay.com/doc?95032
SPICE model	http://www.vishay.com/doc?95287



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