ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop per leg See fig. 1	V_{FM} (1)	20 A	T_J = 25 °C	0.61	V
		40 A		0.83	
		20 A	T_J = 125 °C	0.58	
		40 A		0.75	
Maximum reverse leakage current per leg See fig. 2	I_{RM} (1)	T_J = 25 °C	V_R = Rated V_R	2	mA
		T_J = 125 °C		89	
Threshold voltage	$V_{F(TO)}$	T_J = T_J maximum		0.37	V
Forward slope resistance	r_t			8.26	mΩ
Maximum junction capacitance per leg	C_T	V_R = 5 V_{DC} (test signal range 100 kHz to 1 MHz) 25 °C		1220	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/µs

Note

(1) Pulse width < 300 µs, 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	2.0	°C/W
Maximum thermal resistance, junction to case per package				1.0	
Typical thermal resistance, case to heatsink		R_{thCS}	Mounting surface, smooth and greased (Only for TO-262)	0.50	
Approximate weight				2	g
				0.07	oz.
Mounting torque	minimum			6 (5)	kgf · cm (lbf · in)
	maximum			12 (10)	
Marking device			Case style D^2PAK	48CTQ060S	
			Case style TO-262	48CTQ060-1	

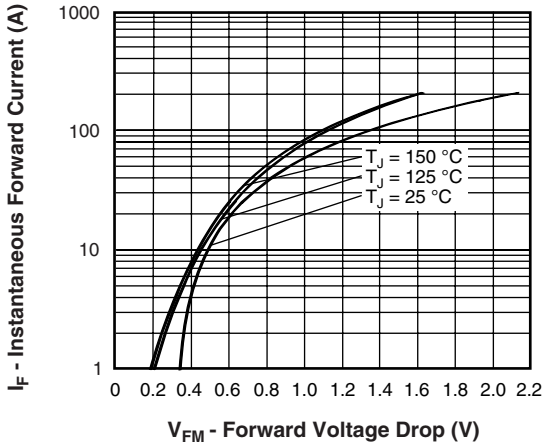

Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

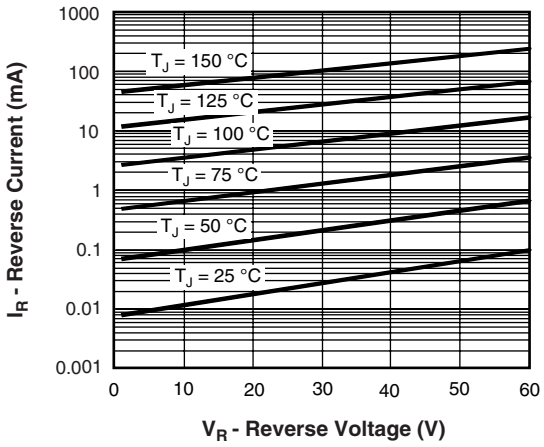

Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

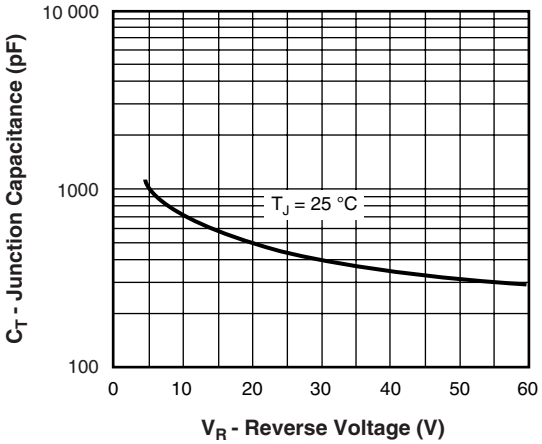

Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

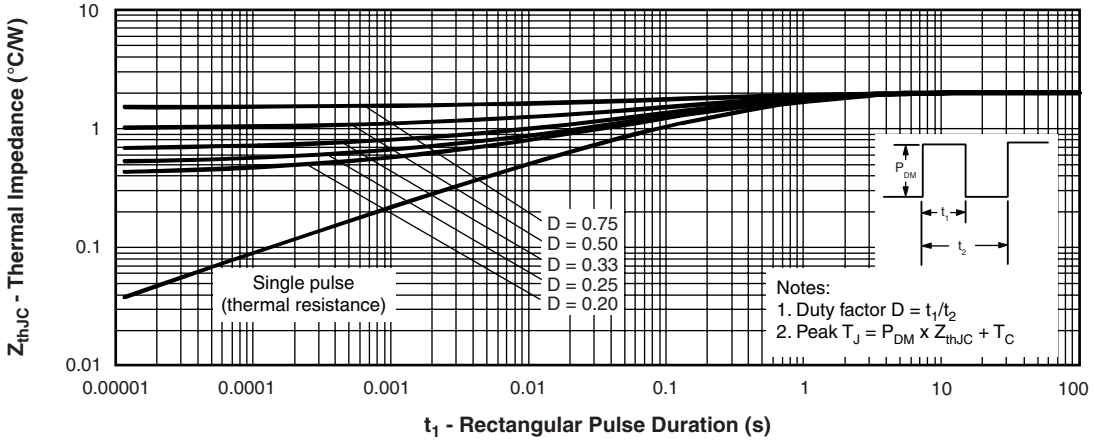

Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics (Per Leg)

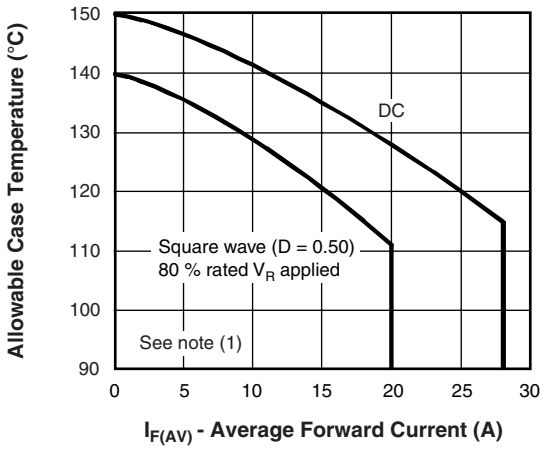

Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current (Per Leg)

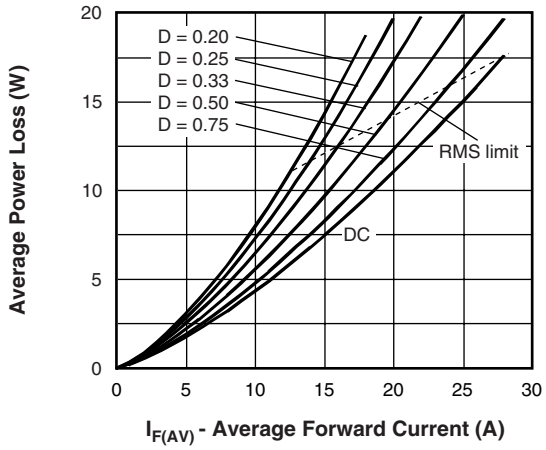

Fig. 6 - Forward Power Loss Characteristics (Per Leg)

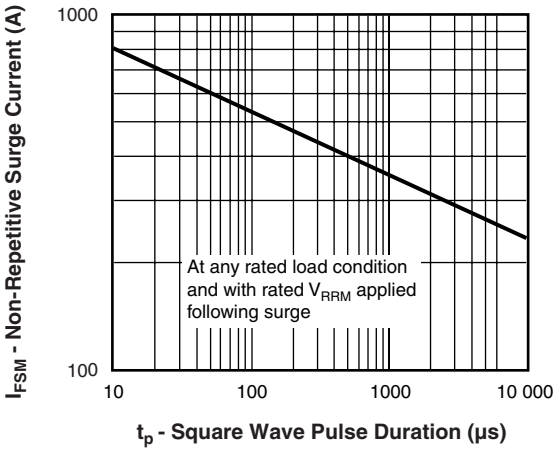

Fig. 7 - Maximum Non-Repetitive Surge Current (Per Leg)

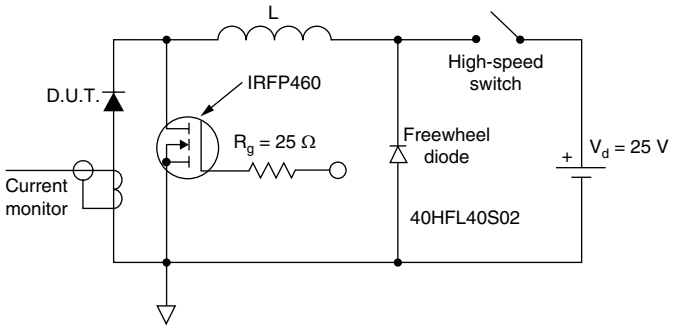

Fig. 8 - Unclamped Inductive Test Circuit

Note

(1) Formula used: $T_C = T_J - (Pd + Pd_{REV}) \times R_{thJC}$;
Pd = Forward power loss = $I_{F(AV)} \times V_{FM}$ at ($I_{F(AV)}$/D) (see fig. 6);
Pd_{REV} = Inverse power loss = $V_{R1} \times I_R (1 - D)$; I_R at V_{R1} = 10 V

ORDERING INFORMATION TABLE

Device code

48	C	T	Q	060	S	TRL	-
1	2	3	4	5	6	7	8

1 - Current rating (40 A)

2 - Circuit configuration:
C = Common cathode

3 - T = TO-220

4 - Schottky “Q” series

5 - Voltage rating (060 = 60 V)

6 - • S = D^2PAK
• -1 = TO-262

7 - • None = Tube (50 pieces)
• TRL = Tape and reel (left oriented - for D^2PAK only)
• TRR = Tape and reel (right oriented - for D^2PAK only)

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 information	http://www.vishay.com/doc?95032

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