

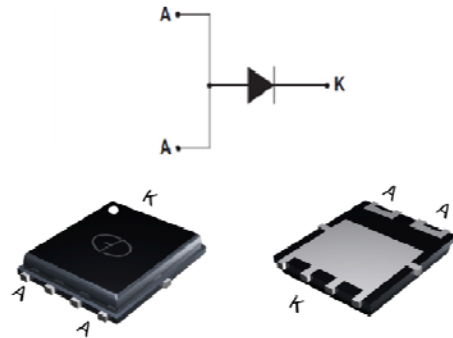


SMURP460

Ultrafast Recovery Planar Diode
Reverse Voltage 600 Volts Forward Current 4 Amperes

Features

- FRED (Planar) wafer construction
- Ultrafast recovery time
- Low forward voltage drop, low power losses
- High efficiency operation
- Plastic package has underwriters Laboratory Flammability Classification 94V-0



Package: POWER QFN5x6

Mechanical Data

- Case: Epoxy, Molded
- Weight: 0.1grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 3000 units per reel

Maximum Ratings & Electrical Characteristics

($T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	SMURP460	UNIT
Maximum repetitive peak reverse voltage			V_{RRM}	600	V
Working peak reverse voltage			V_{RWM}	600	V
Maximum DC blocking voltage			V_{DC}	600	V
Maximum average forward rectified current at $T_c=105^\circ\text{C}$ total device per diode			$I_F(AV)$	4	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode			I_{FSM}	90	A
Voltage rate of change (rated V_R)			DV/dt	10000	V/us
Operating junction temperature range			T_J	-55 to+150	$^\circ\text{C}$
Storage temperature range			T_{STG}	-55 to+150	$^\circ\text{C}$
Maximum Reverse Recover Time ($I_F=0.5\text{Amp}$, $I_R=1.0\text{Amp}$, $I_{rec}=0.25\text{Amp}$)	T_{rr}		T_{rr}	35	ns
Maximum instantaneous forward voltage per leg	$I_F=4\text{A}$ $I_F=4\text{A}$	$T_C=25^\circ\text{C}$ $T_C=125^\circ\text{C}$	V_F	1.50 1.40	V
Maximum reverse current per leg at working peak Reverse voltage		$T_J=25^\circ\text{C}$ $T_J=100^\circ\text{C}$	I_R	10 500	μA μA
Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted					
Symbol	Parameter		TYP (POWER QFN 5x6)		Unit
R θ JC	Thermal Resistance, Junction to Case per Leg		2.5		$^\circ\text{C}/\text{W}$
R θ JA	Thermal Resistance, Junction to Ambient per Leg		50		$^\circ\text{C}/\text{W}$

Note: Pulse test:300us pulse width, duty cycle=2%



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Ratings and Characteristics Curves

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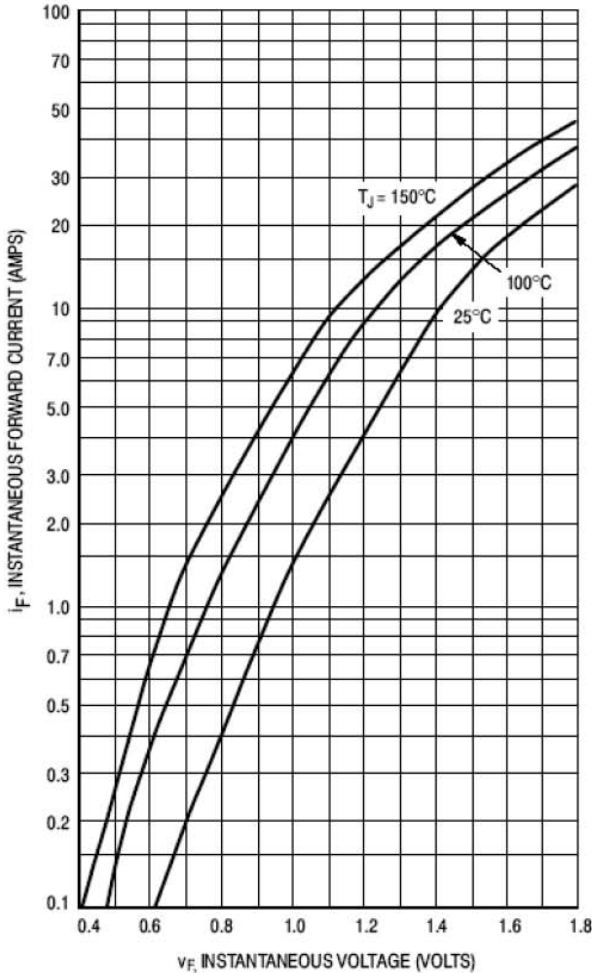


Figure 11. Typical Forward Voltage, Per Leg

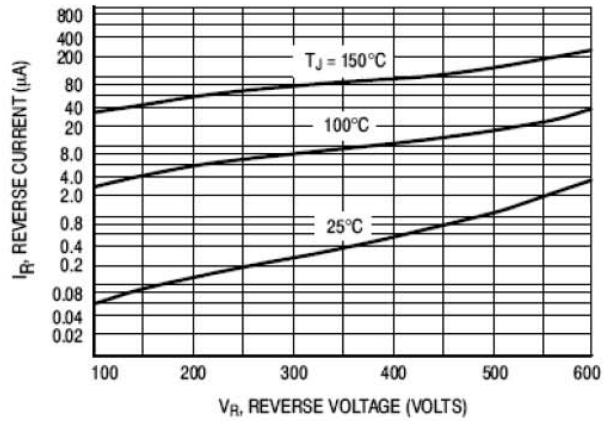


Figure 12. Typical Reverse Current, Per Leg*

* The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if V_R is sufficiently below rated V_R .

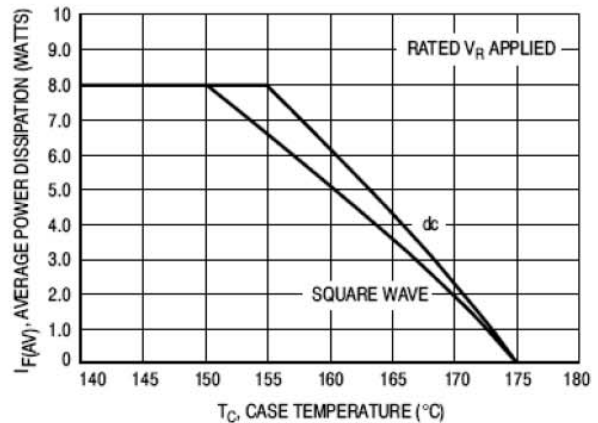


Figure 13. Current Derating, Case, Per Leg

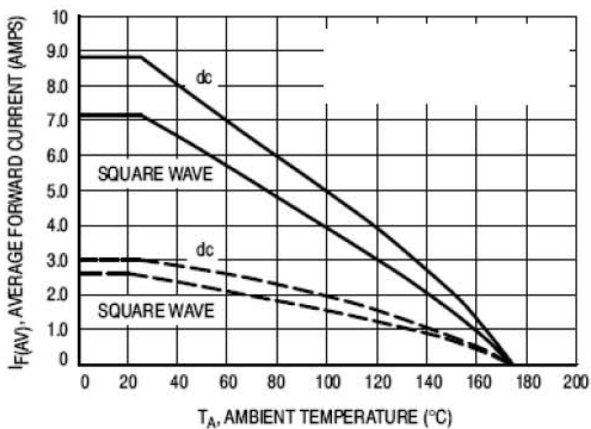


Figure 14. Current Derating, Ambient, Per Leg

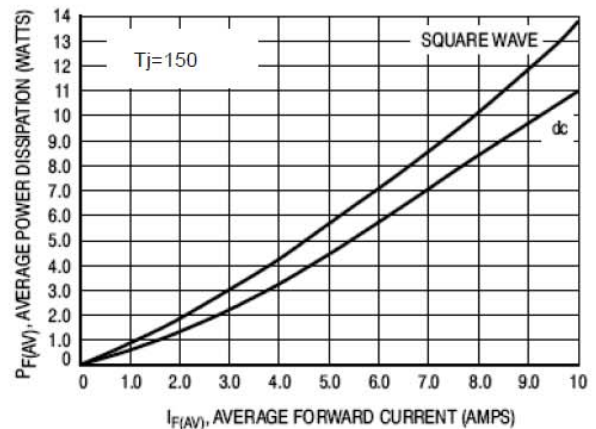


Figure 15. Power Dissipation, Per Leg



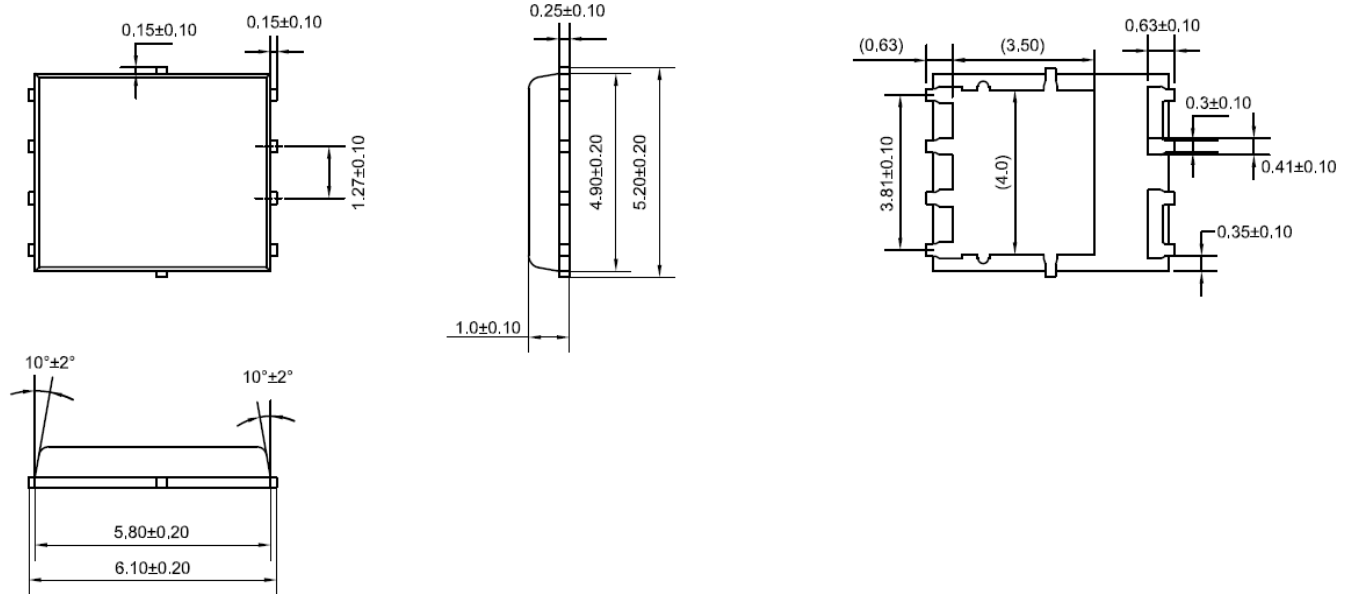
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Package Outline Dimensions

Unit: millimeters

POWER QFN 5x6





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