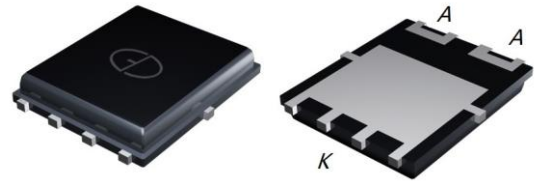


## 4A,600V Ultrafast Recovery Rectifier

### Features

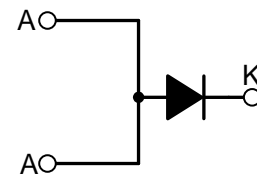
- FRED Wafer Construction
- Low forward drop voltage, low power loss
- High Surge Current Capability
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



### Applications

- SMPS
- Lighting
- UPS

#### PDFN56



### Mechanical Data

- Case: Epoxy, Molded
- Weight: 1.4grams (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 plastic tube

### Maximum Ratings & Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	SMURP460	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	600	V
Working peak reverse voltage	V <sub>RMS</sub>	420	V
Maximum DC blocking voltage	V <sub>DC</sub>	600	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	4	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	90	A
Voltage rate of change (rated V <sub>R</sub> )	dv/dt	10000	V/μS
Operating junction temperature range	T <sub>J</sub>	-55 to +150	°C
Storage temperature range	T <sub>STG</sub>	-55 to +150	°C

<b>Electrical Specifications</b> ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)					
Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward Drop Voltage (Note1)	$V_F$	$I_F=4\text{A}, T_J=25^{\circ}\text{C}$	-	1.50	V
		$I_F=4\text{A}, T_J=125^{\circ}\text{C}$	-	1.40	
Reverse leakage current @VR (Note2)	$I_R$	$T_J=25^{\circ}\text{C}$	-	10	$\mu\text{A}$
		$T_J=125^{\circ}\text{C}$	-	500	
Reverse recovery time	$t_{rr}$	$I_F=0.5\text{A},$ $I_R=1.0\text{A}, I_{RR}=0.25\text{A}$	-	35	ns

<b>Thermal-Mechanical Specifications</b> ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.5	V
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62.5	$\mu\text{A}$

Note:

1. Pulse test with  $PW=0.3\text{ms}$ , duty cycle=2%
2. Pulse test with  $PW=30\text{ms}$

## Ratings and Characteristics Curves

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

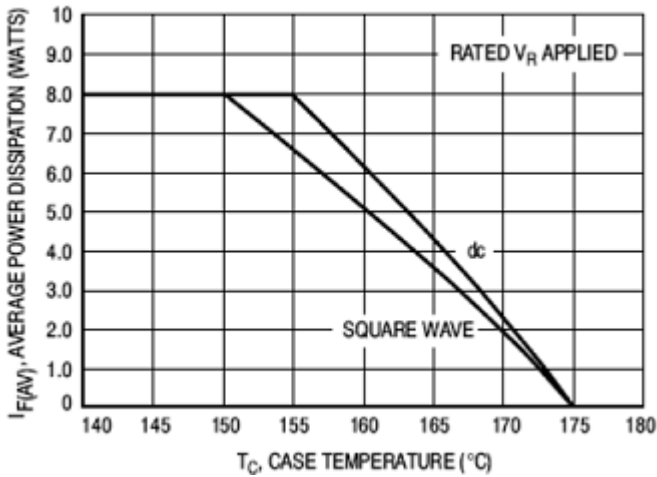


Fig.1 – Forward Current Derating Curve

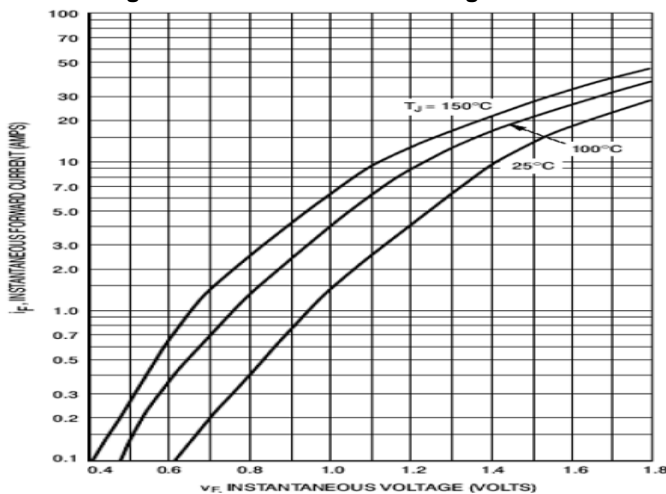


Fig.3 – Typical Forward Voltage Characteristics

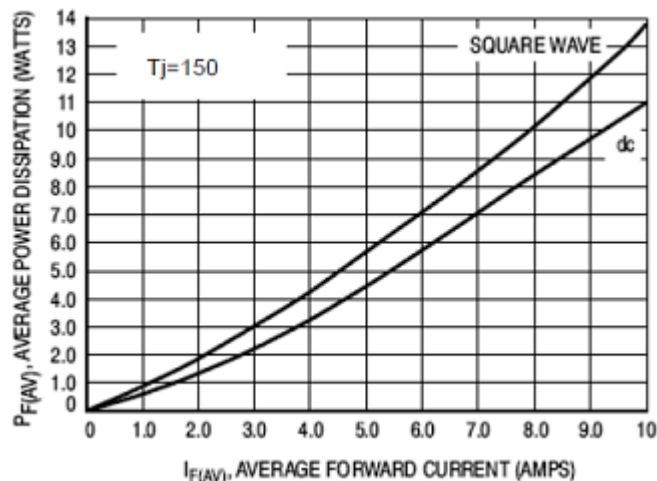


Fig.5 – Typical Junction Capacitance

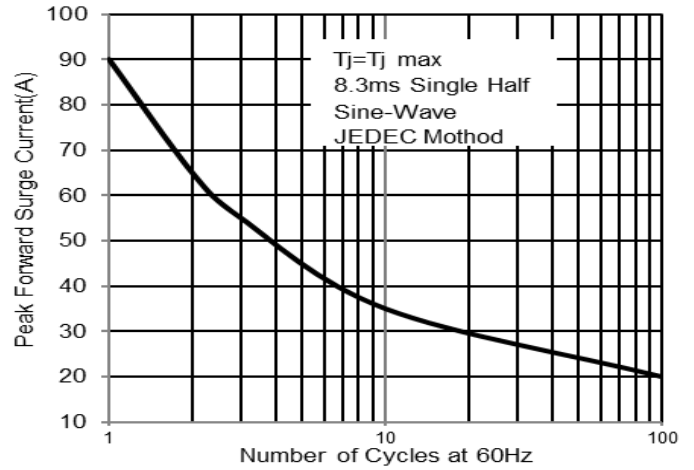


Fig.2 – Maximum Non-Repetitive Surge Current

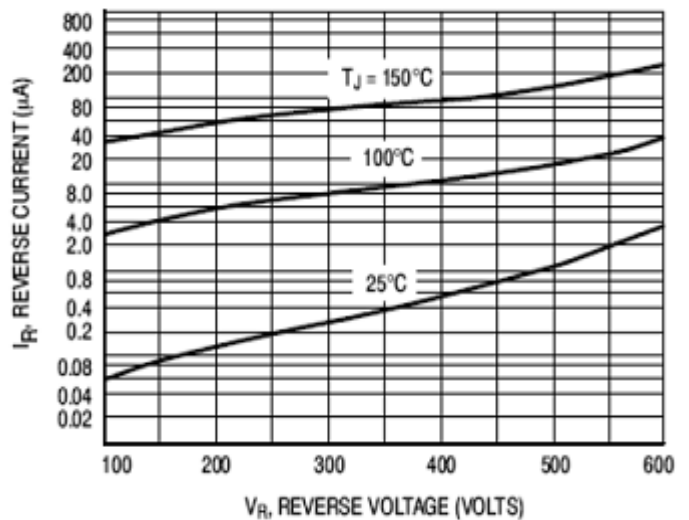
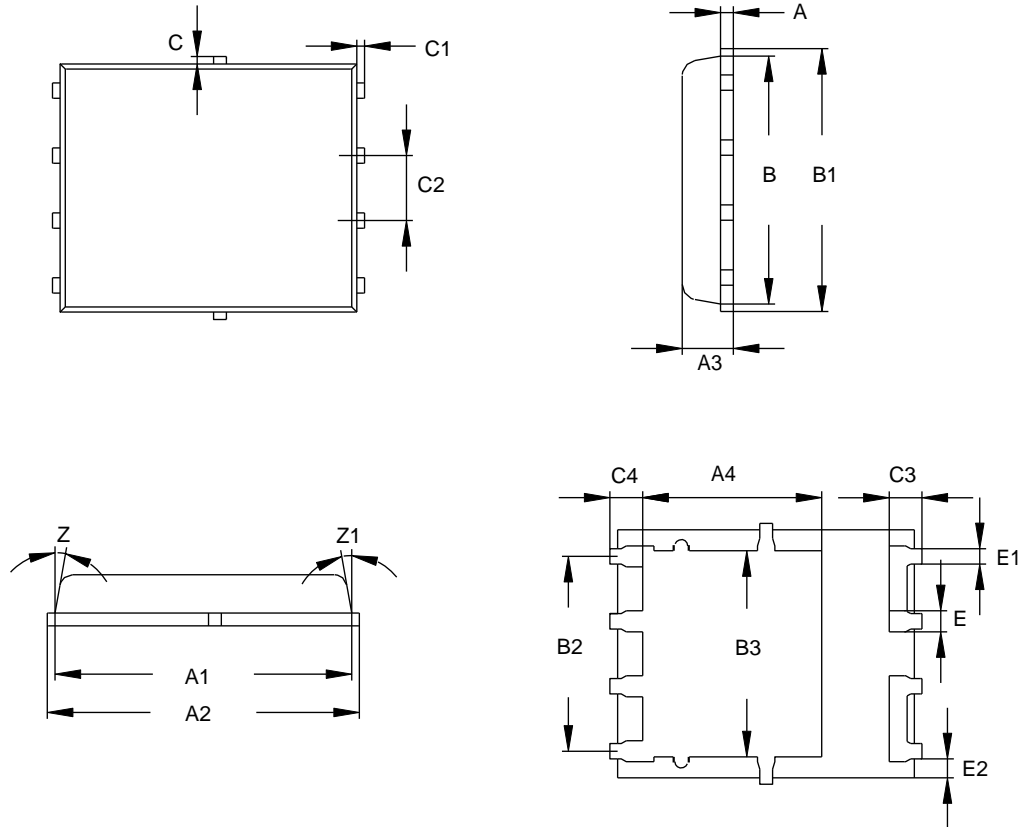


Fig.4 – Typical Reverse Current Characteristics

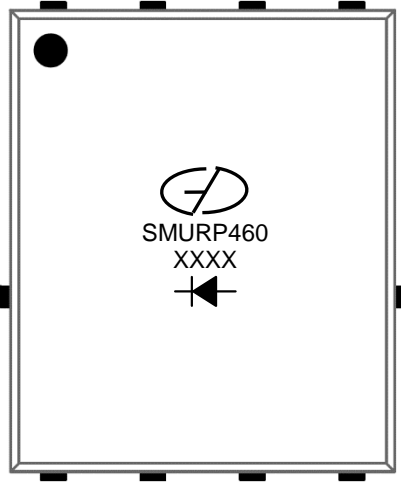
**Package Outline Dimensions** (Unit: millimeters)



**PDFN56**



PDFN56							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	0.15	0.25	0.35	C1	0.05	0.15	0.25
A1	5.6	5.8	6.0	C2	1.17	1.27	1.37
A2	5.9	6.1	6.3	C3	0.53	0.63	0.73
A3	0.9	1	1.1	C4		0.63	
A4		3.5		E	0.31	0.41	0.51
B	4.7	4.9	5.1	E1	0.2	0.3	0.4
B1	5	5.2	5.4	E2	0.25	0.35	0.45
B2	3.71	3.81	3.91	Z	8°	10°	12°
B3		4		Z1	8°	10°	12°
C	0.05	0.15	0.25				

## Marking Outline



1. Logo Mark: 
2. Part Name: SMURP460
3. Data Code: XXXX
4. Polarity : 

## Revision History

Document Version	Date of release	Description of changes
Rev.A	2013.12.10	Released Datasheet
Rev.B	2021.01.12	Modify document format

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