

30A, 600 - 800V Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Lead for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

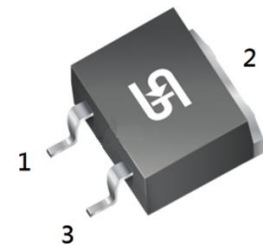
APPLICATIONS

- On Board Charger

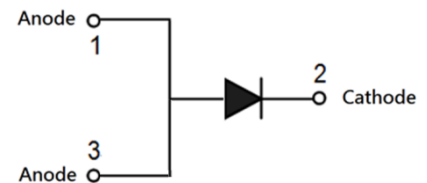
MECHANICAL DATA

- Case: D²PAK-D
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.4 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	30	A
V_{RRM}	600 - 800	V
I_{FSM}	300	A
$T_J \text{ MAX}$	150	°C
Package	D ² PAK-D	



D²PAK-D



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	PLDS3060H	PLDS3080H	UNIT
Marking code on the device		PLDS3060H	PLDS3080H	
Repetitive peak reverse voltage	V_{RRM}	600	800	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	560	V
Forward current	I_F	30		A
Surge peak forward current, 1.0 ms single half sine-wave superimposed on rated load	I_{FSM}	328		A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	300		A
Junction temperature	T_J	-55 to +150		°C
Storage temperature	T_{STG}	-55 to +150		°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	4	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	11	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	5	°C/W

Thermal Performance Note: Units mounted on heatsink 4" x 6" x 0.25" Al-plate

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	PLDS3060H	I _F = 15A, T _J = 25°C	V _F	0.95	-	V
		I _F = 30A, T _J = 25°C		1.04	1.14	V
		I _F = 15A, T _J = 125°C		0.83	-	V
		I _F = 30A, T _J = 125°C		0.98	1.09	V
	PLDS3080H	I _F = 15A, T _J = 25°C	V _F	0.98	-	V
		I _F = 30A, T _J = 25°C		1.07	1.18	V
		I _F = 15A, T _J = 125°C		0.87	-	V
		I _F = 30A, T _J = 125°C		1.04	1.10	V
Reverse current @ rated V _R ⁽²⁾		T _J = 25°C	I _R	-	10	μA
		T _J = 125°C		-	150	μA
Junction capacitance	PLDS3060H	1MHz, V _R = 4.0V	C _J	162	-	pF
	PLDS3080H			138	-	pF

Notes:

- Pulse test with $PW = 0.3\text{ms}$
- Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾	PACKAGE	PACKING
PLDS30xH	D ² PAK-D	800 / Tape & Reel

Notes:

- "x" defines voltage from 600V(PLDS3060H) to 800V(PLDS3080H)

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

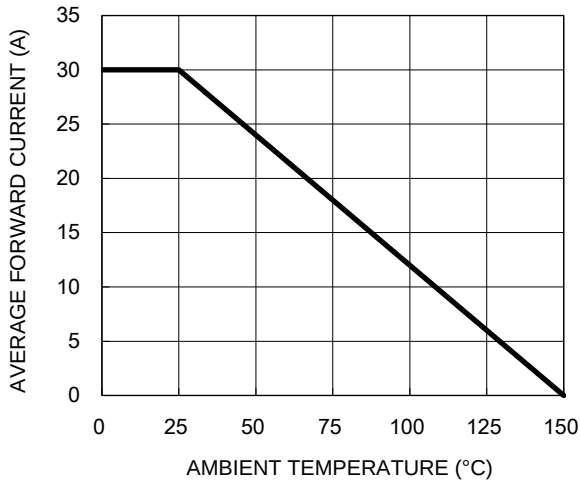


Fig.2 Typical Junction Capacitance

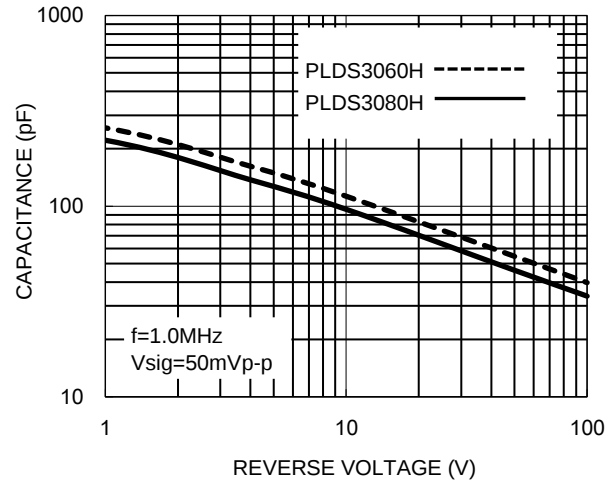


Fig.3 Typical Reverse Characteristics

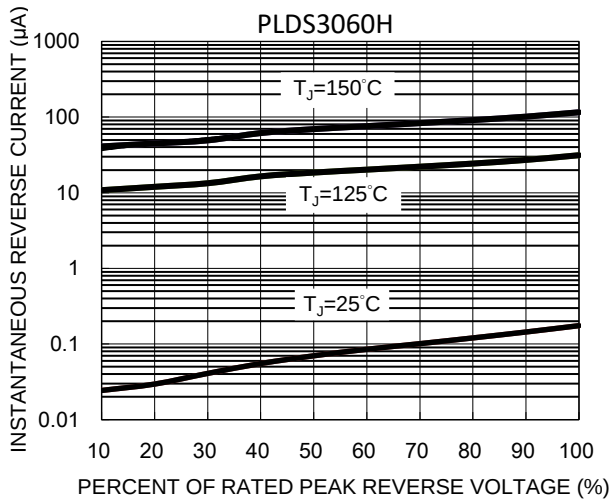


Fig.4 Typical Forward Characteristics

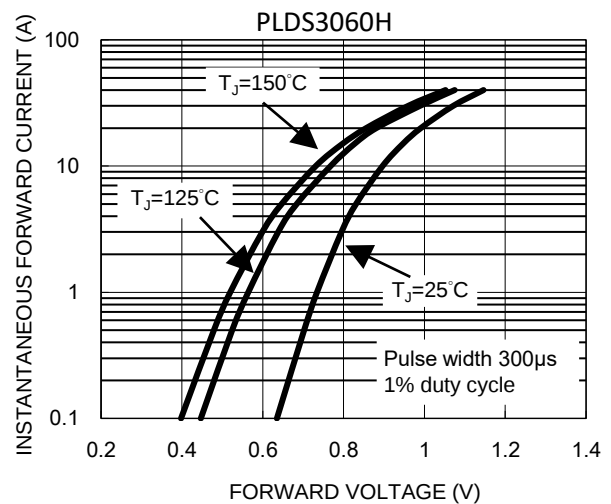


Fig.5 Typical Reverse Characteristics

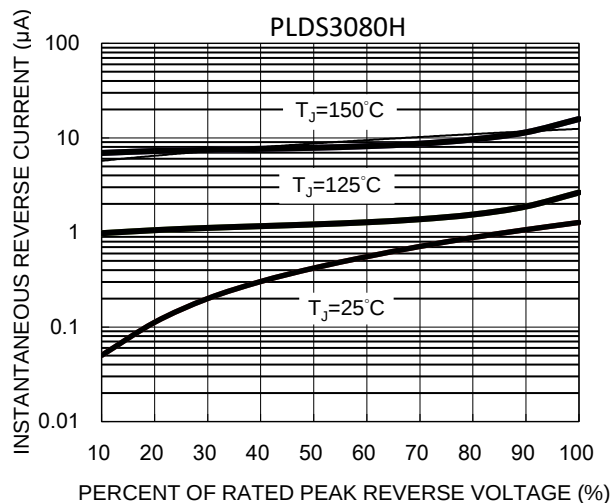
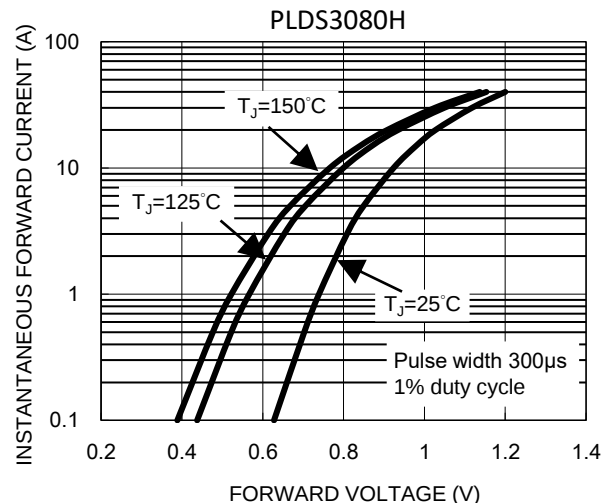


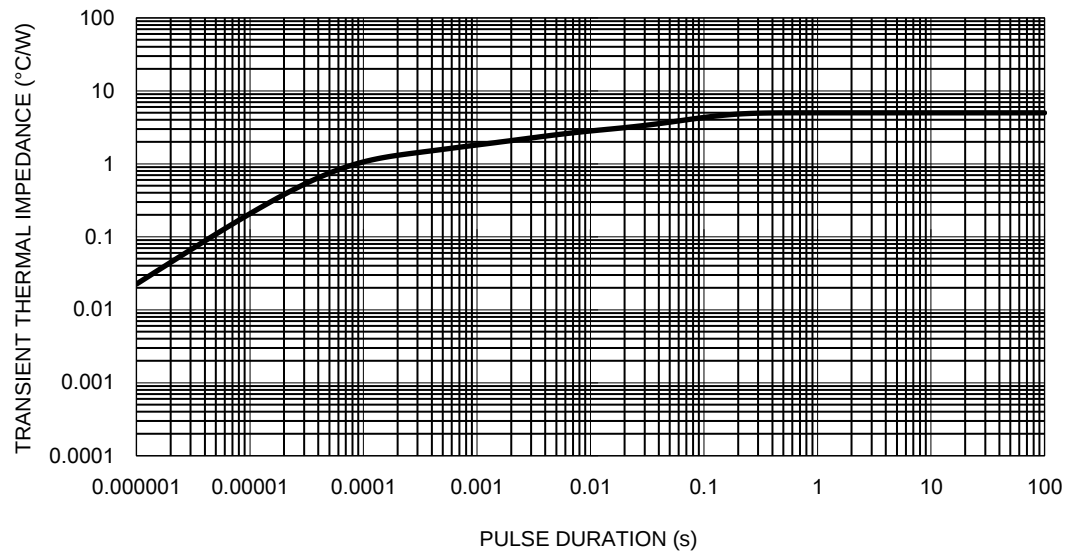
Fig.6 Typical Forward Characteristics



CHARACTERISTICS CURVES

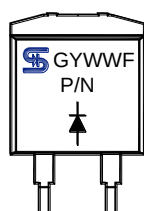
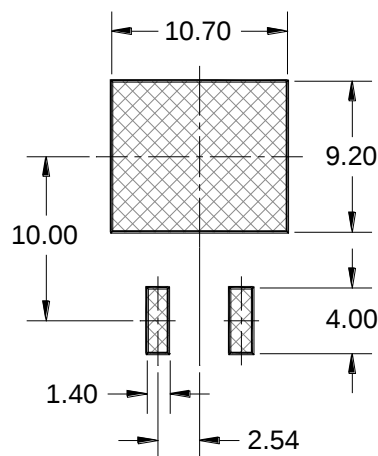
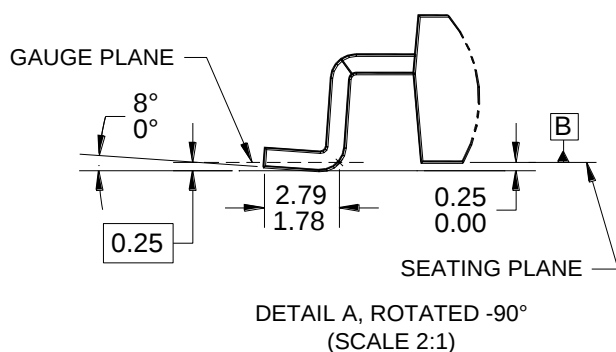
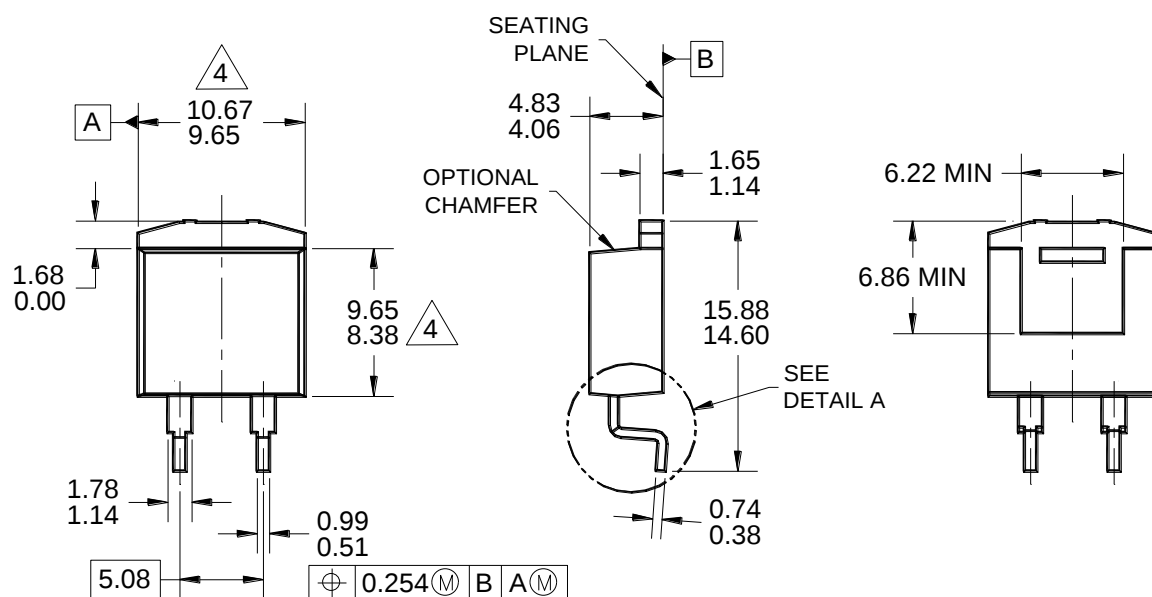
($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.7 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS

D²PAK-D



MARKING DIAGRAM

P/N = MARKING CODE
 G = GREEN COMPOUND
 YWW = DATE CODE
 F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS ARE IN MILLIMETERS.
- DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
- THE PACKAGE OUTLINE REFERENCE: JEDEC TO-263, VARIATION AB, ISSUE F.
- MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH. THESE DIMENSIONS ARE MEASURED AT THE OUTERMOST EXTREME OF THE PLASTIC BODY.
- DWG NO. REF: HQ2SD07-D2PAKD-066 REV A.

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