

30A, 1200V High Voltage Surface Mount Rectifier

FEATURES

- Planar technology
- Low forward conduction
- Low power loss, high efficiency
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

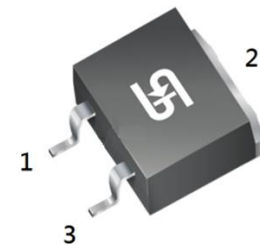
APPLICATIONS

- General purpose
- Switching mode power supply (SMPS)
- Totem-pole PFC

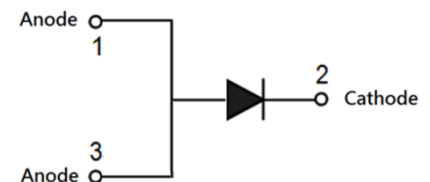
MECHANICAL DATA

- 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: 1.42g

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	30	A
V_{RRM}	1200	V
I_{FSM}	400	A
$T_{J\ MAX}$	175	°C
Package	D ² PAK-D	



D²PAK-D



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		V_{RRM}	1200	V
Reverse voltage, total rms value		$V_{R(RMS)}$	840	V
Forward current		I_F	30	A
Surge peak forward current single half sine-wave superimposed on rated load	$t = 8.3\text{ms}$	I_{FSM}	400	A
	$t = 1.0\text{ms}$		1000	
Junction temperature		T_J	-40 to +175	°C
Storage temperature		T_{STG}	-55 to +175	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance ⁽¹⁾	$R_{\theta JL}$	1.2	°C/W
Junction-to-ambient thermal resistance ⁽¹⁾	$R_{\theta JA}$	6	°C/W
Junction-to-case thermal resistance ⁽²⁾	$R_{\theta JC}$	0.45	°C/W

Thermal Performance Notes:

1. Mounted on heat sink with 4" x 6" x 0.25" Al-plate
2. JEDEC 51-14 transient dual interface test method (TDIM)

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 15\text{A}, T_J = 25^\circ\text{C}$	V_F	0.98	-	V
	$I_F = 30\text{A}, T_J = 25^\circ\text{C}$		1.09	1.3	V
	$I_F = 15\text{A}, T_J = 125^\circ\text{C}$		0.85	-	V
	$I_F = 30\text{A}, T_J = 125^\circ\text{C}$		0.97	-	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	10	μA
	$T_J = 125^\circ\text{C}$		2	-	μA
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	C_J	124	-	pF
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	6372	-	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
PLDS30Q	D ² PAK-D	800 / Tape & Reel

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

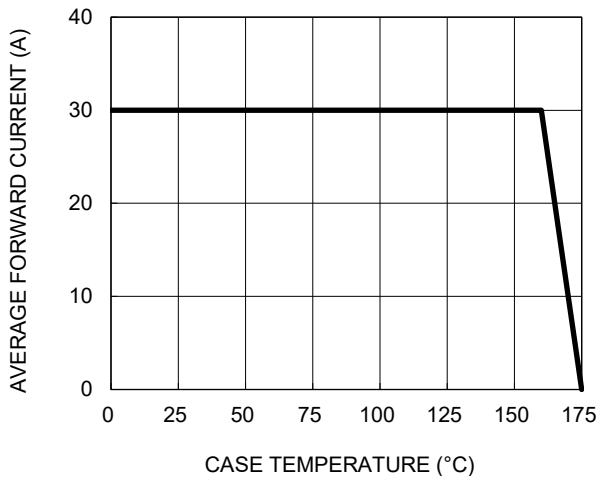


Fig.2 Typical Junction Capacitance

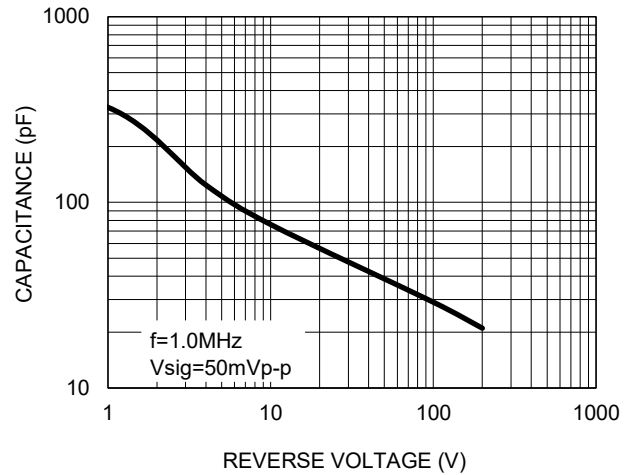


Fig.3 Typical Reverse Characteristics

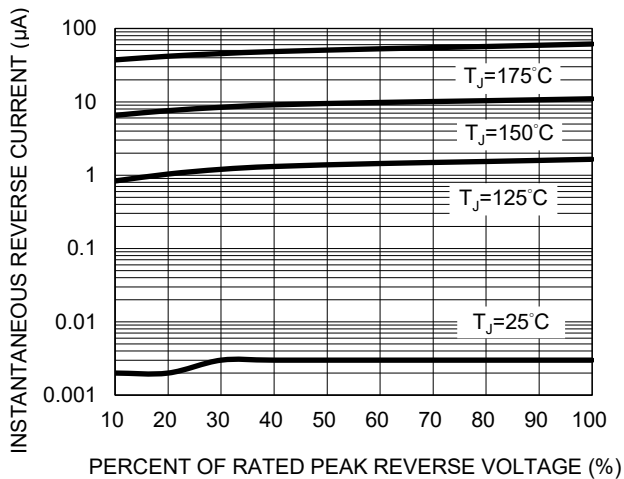


Fig.4 Typical Forward Characteristics

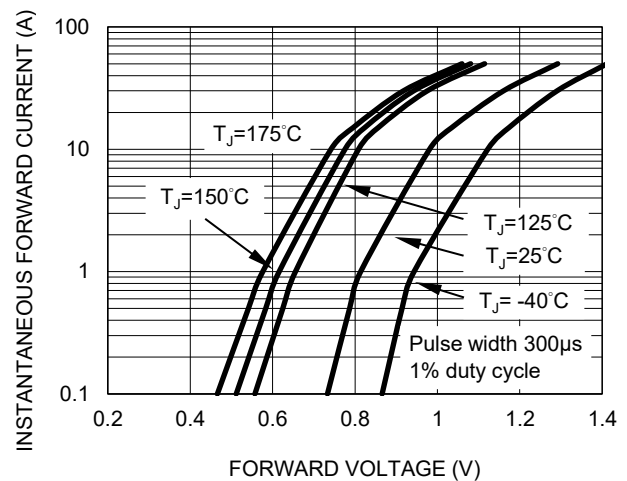
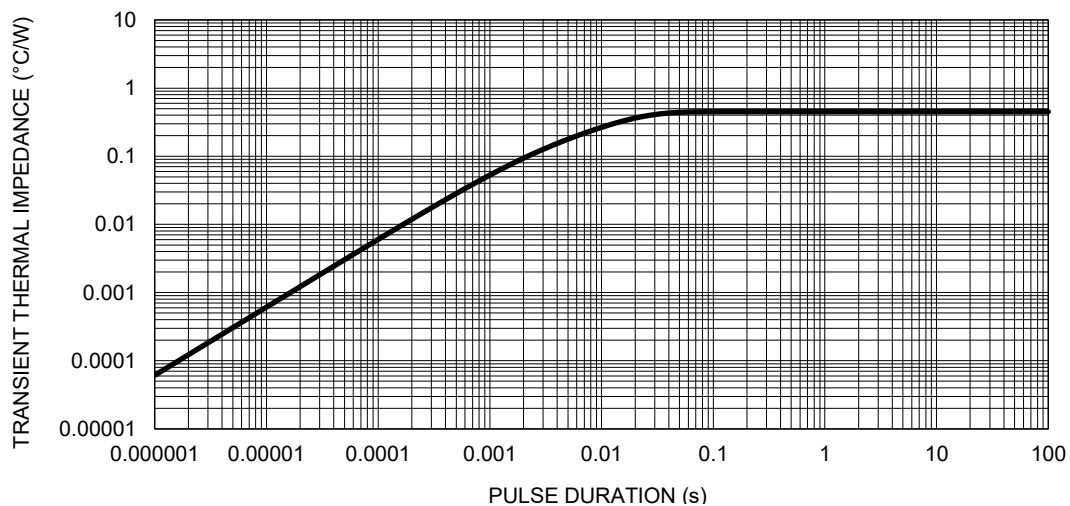
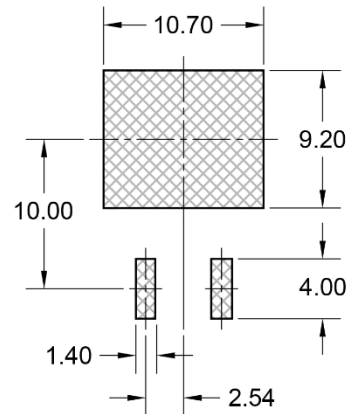
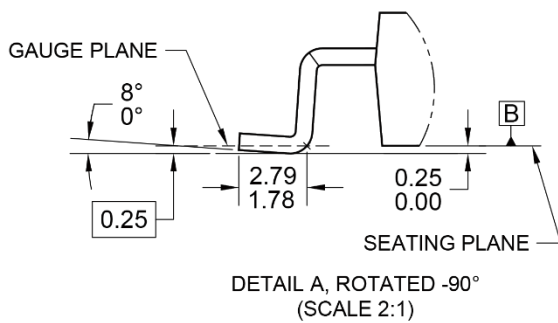
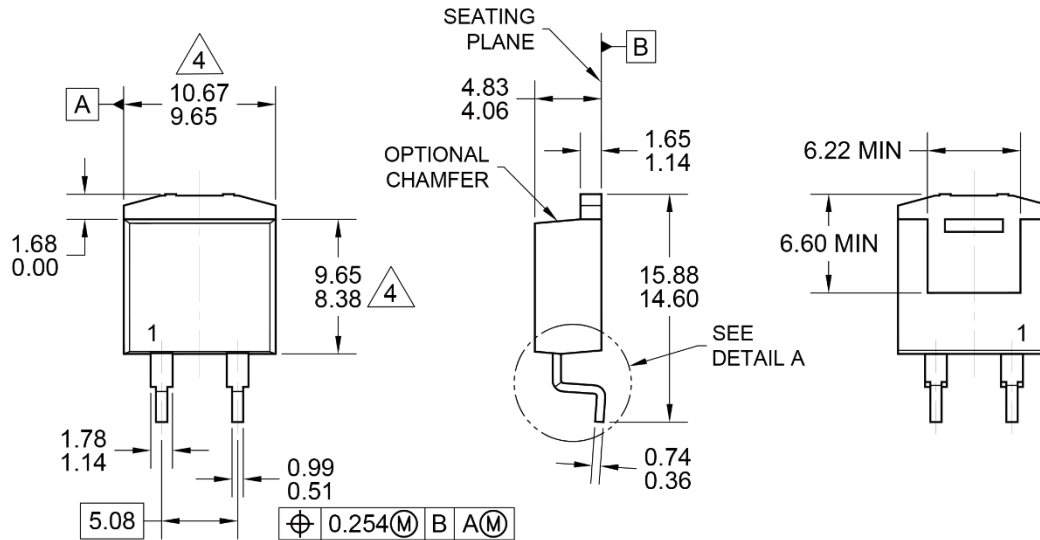


Fig.5 Typical Transient Thermal Impedance

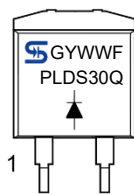


PACKAGE OUTLINE DIMENSIONS

D²PAK-D



SUGGESTED PAD LAYOUT



MARKING DIAGRAM

G = GREEN COMPOUND
YWW = DATE CODE
F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

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

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