2A, 200V - 1000V Fast Recovery Surface Mount Rectifier

FEATURES

- Glass passivated chip junction
- Low power loss, high efficiency
- Fast switching for high efficiency
- Low profile package
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- General purpose

MECHANICAL DATA

- Case: SOD-128
- 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: Indicated by cathode band
- Weight: 0.027g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	2	A
V_{RRM}	200 - 1000	V
I_{FSM}	50	A
$T_{J\ MAX}$	175	°C
Package	SOD-128	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

SOD-128

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)								
PARAMETER		**SYMBOL**	**RS2DFS**	**RS2GFS**	**RS2JFS**	**RS2KFS**	**RS2MFS**	**UNIT**
Marking code on the device			RS2DFS	RS2GFS	RS2JFS	RS2KFS	RS2MFS	
Repetitive peak reverse voltage		V_{RRM}	200	400	600	800	1000	V
Reverse voltage, total rms value		$V_{R(RMS)}$	140	280	420	560	700	V
Forward current		I_F	2					A
Surge peak forward current, single half sine-wave superimposed on rated load	t = 8.3ms	I_{FSM}	50					A
	t = 1.0ms		140					A
Junction temperature		T_J	-55 to +175					°C
Storage temperature		T_{STG}	-55 to +175					°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	16	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	73	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	14	°C/W

Thermal Performance Note: Units mounted on PCB (5mm x 5mm Cu pad test board)

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	RS2DFS RS2GFS RS2JFS	I_F = 1.0A, T_J = 25°C	V_F	0.93	-	V
		I_F = 2.0A, T_J = 25°C		1.01	1.30	V
		I_F = 1.0A, T_J = 125°C		0.78	-	V
		I_F = 2.0A, T_J = 125°C		0.88	1.02	V
	RS2KFS RS2MFS	I_F = 1.0A, T_J = 25°C		0.98	-	V
		I_F = 2.0A, T_J = 25°C		1.06	1.30	V
		I_F = 1.0A, T_J = 125°C		0.83	-	V
		I_F = 2.0A, T_J = 125°C		0.93	1.05	V
Reverse current @ rated V_R[2]		T_J = 25°C	I_R	-	1	μA
		T_J = 125°C		-	40	μA
Reverse recovery time	RS2DFS RS2GFS	I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	-	150	ns
	RS2JFS			-	250	ns
	RS2KFS RS2MFS			-	500	ns
Junction capacitance	RS2DFS RS2GFS RS2JFS	1MHz, V_R = 4.0V	C_J	11	-	pF
	RS2KFS RS2MFS			10	-	pF

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
RS2xFS	SOD-128	14,000 / Tape & Reel

Notes:

1. "x" defines voltage from 200V(RS2DFS) to 1000V(RS2MFS)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

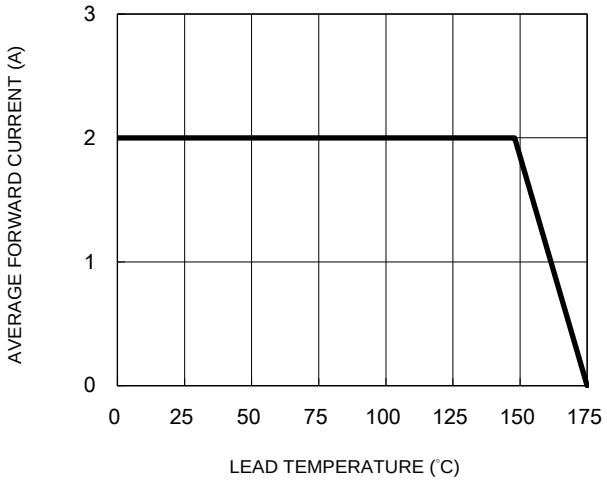


Fig.2 Typical Junction Capacitance

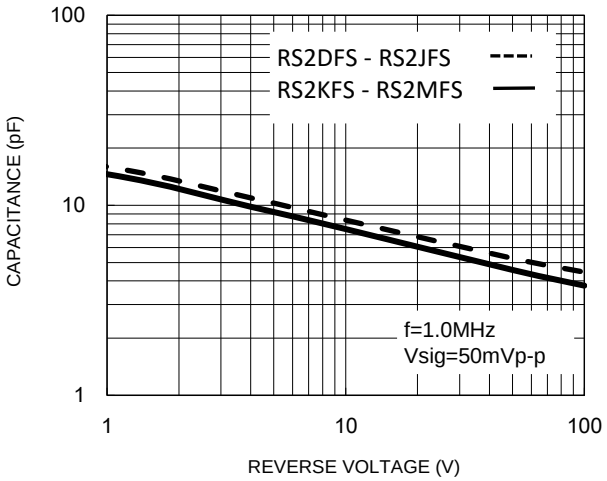


Fig.3 Typical Reverse Characteristics

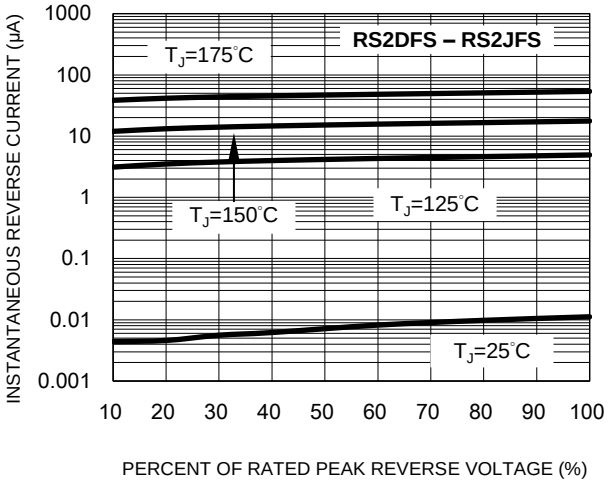


Fig.4 Typical Forward Characteristics

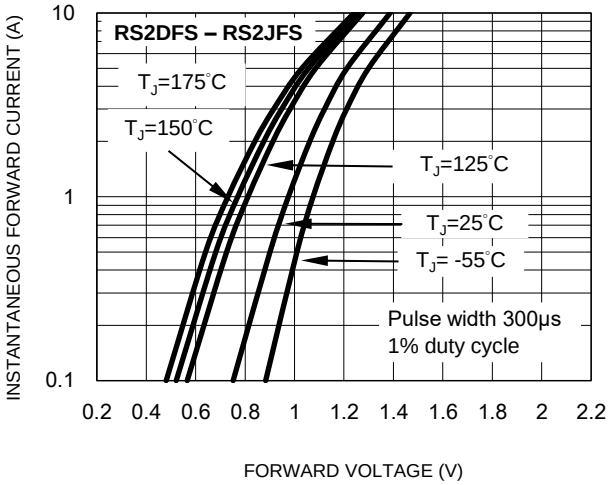


Fig.5 Typical Reverse Characteristics

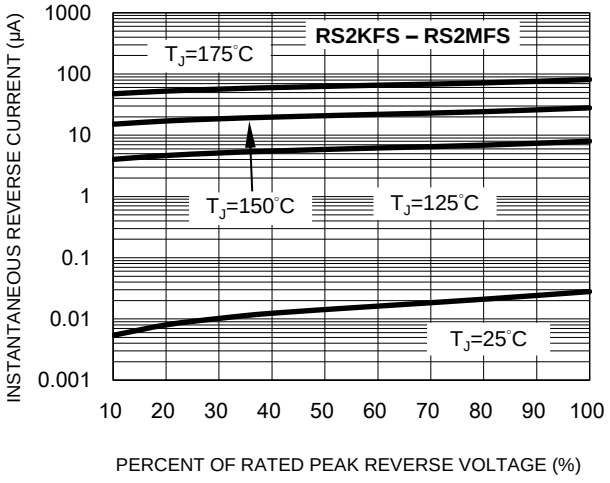
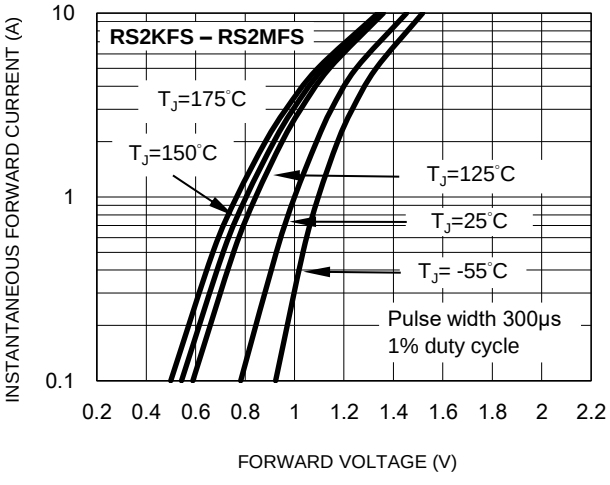


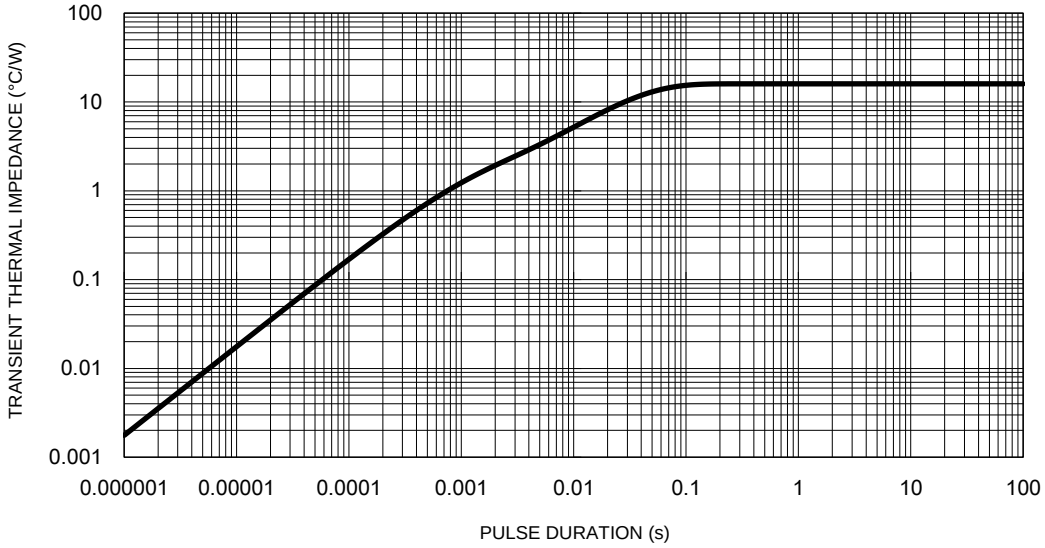
Fig.6 Typical Forward Characteristics



CHARACTERISTICS CURVES

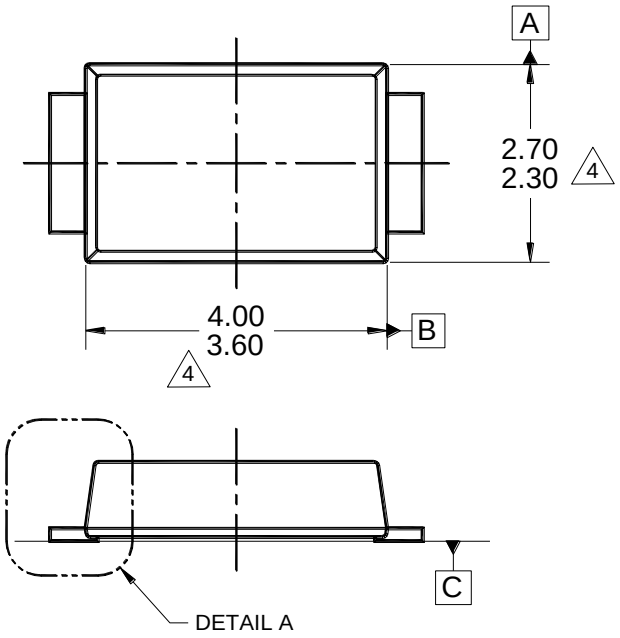
(T_A = 25°C unless otherwise noted)

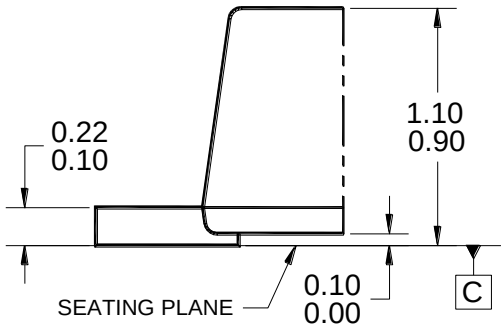
Fig.7 Typical Transient Thermal Impedance



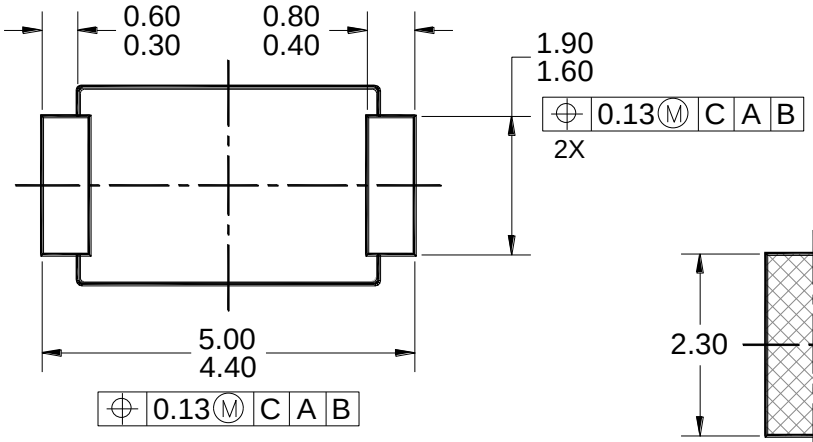
PACKAGE OUTLINE DIMENSIONS

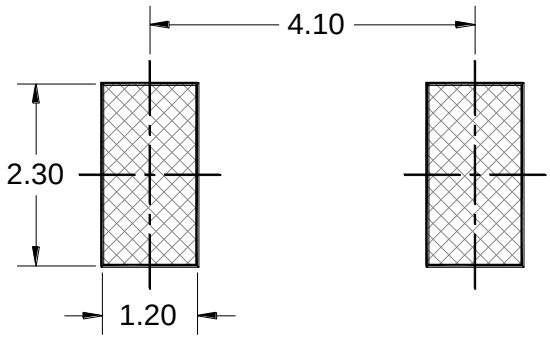
SOD-128



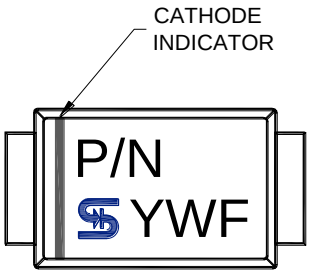


DETAIL A
(SCALE 3:1)





SUGGESTED PAD LAYOUT



MARKING DIAGRAM

P/N = MARKING CODE
YW = DATE CODE
F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-2009.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-221, VARIATION AD, ISSUE B.
4. MODED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. DWG NO. REF: HQ2SD07-SOD128-039 REV A.

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