

1A, 200V - 1000V Surface Mount Fast Recovery Rectifier

FEATURES

- · Glass passivated junction chip
- Ideal for automated placement
- Low profile package
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

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- · High frequency rectification
- · Freewheeling application
- Switching mode converters and inverters in computer, automotive and telecommunication

MECHANICAL DATA

- Case: SOD-128
- Molding compound meets UL 94V-0 flammability rating
- Part no. with suffix "H" means AEC-Q101 qualified
- Packing code with suffix "G" means green compound (halogen-free)
- Moisture sensitivity level: level 1, per J-STD-020
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.027 g (approximately)

KEY PARAMETERS							
PARAMETER	VALUE	UNIT					
I _{F(AV)}	1	Α					
V_{RRM}	200 - 1000	V					
I _{FSM}	30	Α					
T_{JMAX}	150	°C					
Package	SOD-128						
Configuration	Single die						









SOD-128

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C unless otherwise noted)							
PARAMETER	SYMBOL	RS1DFS	RS1GFS	RS1JFS	RS1KFS	RS1MFS	UNIT
Marking code on the device		RS1DFS	RS1GFS	RS1JFS	RS1KFS	RS1MFS	
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(AV)}			1			Α
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I _{FSM}			30			А
Junction temperature	TJ			- 55 to +150)		°C
Storage temperature	T _{STG}	- 55 to +150					°C

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THERMAL PERFORMANCE								
PARAMETER	SYMBOL	LIMIT	UNIT					
Junction-to-lead thermal resistance per diode	$R_{ heta JL}$	29	°C/W					
Junction-to-ambient thermal resistance per diode	$R_{\Theta JA}$	84	°C/W					
Junction-to-case thermal resistance per diode	R _{eJC}	30	°C/W					

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

ELECTRICAL SPECIFICATIONS (T _A = 25°C unless otherwise noted)							
PARAMETER	CONDITIONS	SYMBOL	TYP	МАХ	UNIT		
		$I_F = 0.5A, T_J = 25^{\circ}C$		0.94	1.10		
5		I _F = 1.0A, T _J = 25°C		1.01	1.30	V	
Forward voltage per diode ⁽¹⁾		I _F = 0.5A, T _J = 125°C	V _F	0.79	1.00		
		I _F = 1.0A, T _J = 125°C		0.88	1.20		
Dayaraa ayrrant @ ratad \/ n	7 (2)			-	5	μA	
Reverse current @ rated V _R p	er diode 💛	T _J = 125°C	l _R	-	50	μA	
Junction capacitance		1 MHz, V _R =4.0V	CJ	7	-	pF	
RS1DFS RS1GFS				-	150	ns	
Reverse recovery time	RS1JFS	I _F =0.5A ,I _R =1.0A I _{RR} =0.25A	t _{rr}	-	250	ns	
	RS1KFS RS1MFS			-	500	ns	

Notes:

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

ORDERING INFORMATION						
PART NO.	PART NO. SUFFIX(*)	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING	
RS1xFS	MW C		SOD-128	3,500 / 7" Plastic reel		
(Note 1, 2)	Н	MX	G	SOD-128	14,000 / 13" Plastic reel	

Notes:

- 1. "xx" defines voltage from 200V (RS1DFS) to 1000V (RS1MFS)
- 2. Whole series with green compound (halogen-free)
- *: Optional available

EXAMPLE P/N								
EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION			
RS1DFSHMWG	RS1DFS	Н	MW	G	AEC-Q101 qualified Green compound			

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CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

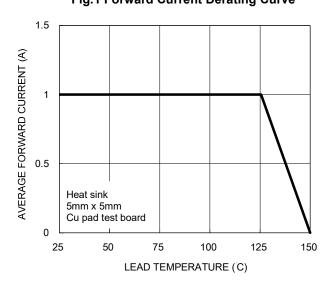


Fig.2 Typical Junction Capacitance

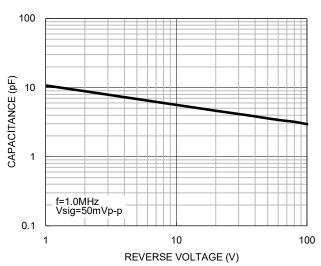


Fig.3 Typical Reverse Characteristics

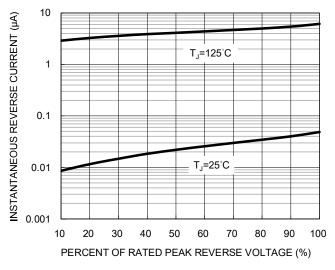
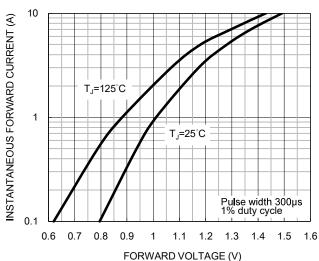


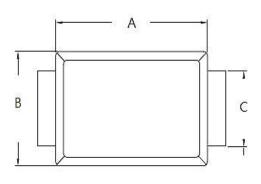
Fig.4 Typical Forward Characteristics



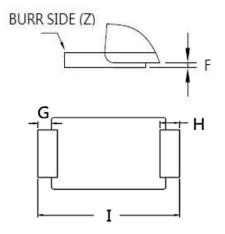


PACKAGE OUTLINE DIMENSIONS

SOD-128

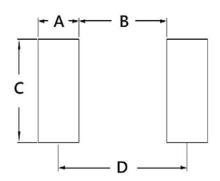






DIM	Unit	(mm)	Unit (inch)		
DIIVI	Min	Max	Min	Max	
Α	3.60	4.00	0.142	0.157	
В	2.30	2.70	0.091	0.106	
С	1.60	1.90	0.063	0.075	
D	0.90	1.10	0.035	0.043	
E	0.10	0.22	0.004	0.009	
F	0.00	0.10	0.000	0.004	
G	0.30	0.60	0.012	0.024	
Н	0.40	0.80	0.016	0.031	
I	4.40	5.00	0.173	0.197	

SUGGESTED PAD LAYOUT



DIM	Unit (mm)	Unit (inch)
Α	1.40	0.055
В	3.00	0.118
С	2.10	0.082
D	4.40	0.173

MARKING DIAGRAM



P/N = Marking Code YW = Date Code F = Factory Code



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