3A, 50V - 1000V High Efficient Surface Mount Rectifier

FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low forward voltage drop
- 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

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
$I_{F(AV)}$	3	A
V_{RRM}	50 - 1000	V
I_{FSM}	150	A
$T_{J\ MAX}$	150	°C
Package	DO-214AB (SMC)	
Configuration	Single die	

APPLICATIONS

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

MECHANICAL DATA

- Case: DO-214AB (SMC)
- 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: 0.21 g (approximately)

DO-214AB (SMC)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	HS3A	HS3B	HS3D	HS3F	HS3G	HS3J	HS3K	HS3M	UNIT
Marking code on the device		HS3A	HS3B	HS3D	HS3F	HS3G	HS3J	HS3K	HS3M	
Repetitive peak reverse voltage	V_{RRM}	50	100	200	300	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	210	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	300	400	600	800	1000	
Forward current	$I_{F(AV)}$	3								A
Surge peak forward current, 8.3 ms single half sine-wave uperimposed on rated load per diode	I_{FSM}	150								A
Junction temperature	T_J	- 55 to +150								°C
Storage temperature	T_{STG}	- 55 to +150								°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**LIMIT**	**UNIT**
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	60	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Forward voltage per diode (1)	HS3A HS3B HS3D HS3F	I_F = 3A, T_J = 25°C	V_F	-	1.0	V
	HS3G			-	1.3	V
	HS3J HS3K HS3M			-	1.7	V
Reverse current @ rated V_R per diode (2)		T_J = 25°C	I_R	-	10	μA
		T_J = 125°C		-	250	μA
Junction capacitance	HS3A HS3B HS3D HS3F HS3G	1 MHz, V_R=4.0V	C_J	80	-	pF
	HS3J HS3K HS3M			50	-	pF
Reverse recovery time	HS3A HS3B HS3D HS3F HS3G	I_F=0.5A , I_R=1.0A I_{RR}=0.25A	t_{rr}	-	50	ns
	HS3J HS3K HS3M			-	75	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**
HS3x (Note 1)	H	R7	G	SMC	850 / 7" Plastic reel
		R6		SMC	3,000 / 13" Paper reel
		M6		SMC	3,000 / 13" Plastic reel
		V7		Matrix SMC	850 / 7" Plastic reel
		V6		Matrix SMC	3,000 / 13" Plastic reel

Note :

1. "x" defines voltage from 50V (HS3A) to 1000V (HS3M)

EXAMPLE					
EXAMPLE P/N	**PART NO.**	**PART NO. SUFFIX**	**PACKING CODE**	**PACKING CODE SUFFIX**	**DESCRIPTION**
HS3AHR7G	HS3A	H	R7	G	AEC-Q101 qualified Green compound

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

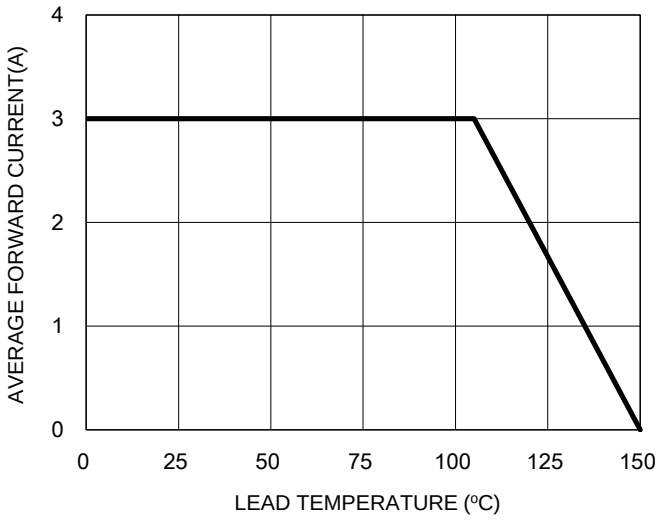


Fig.2 Typical Junction Capacitance

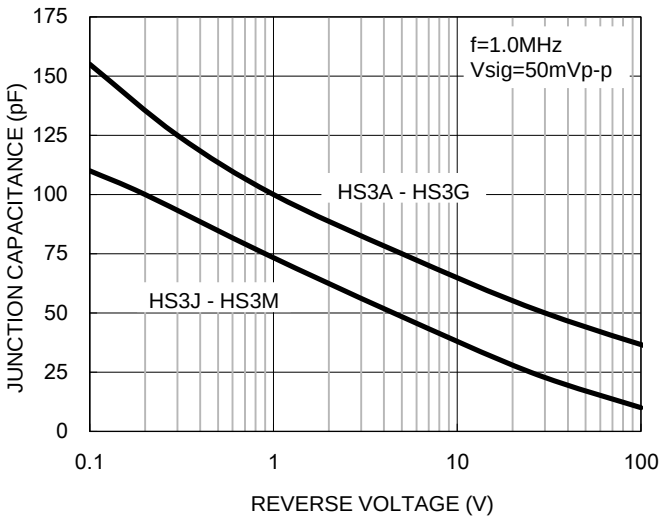


Fig.3 Typical Reverse Characteristics

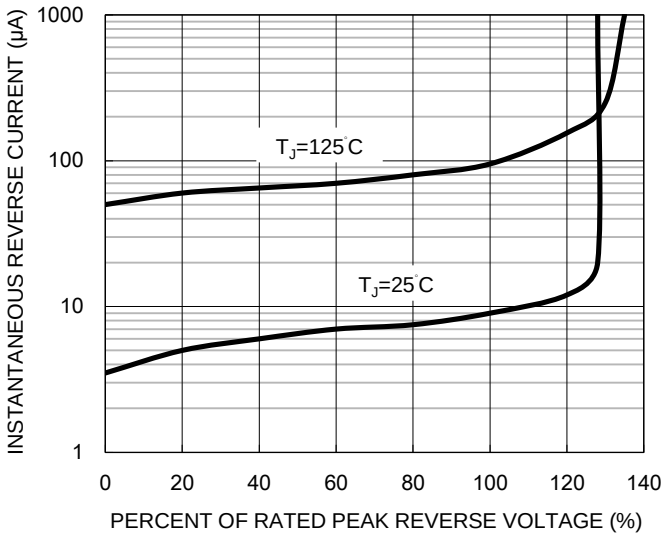
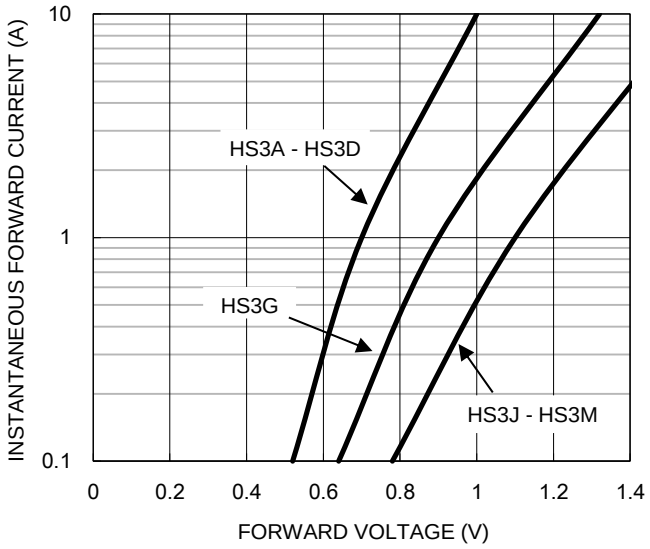


Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.5 Maximum Non-repetitive Forward Surge Current

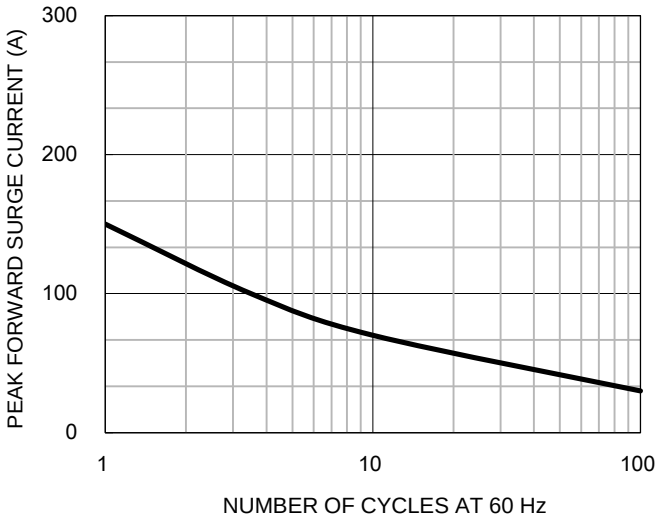
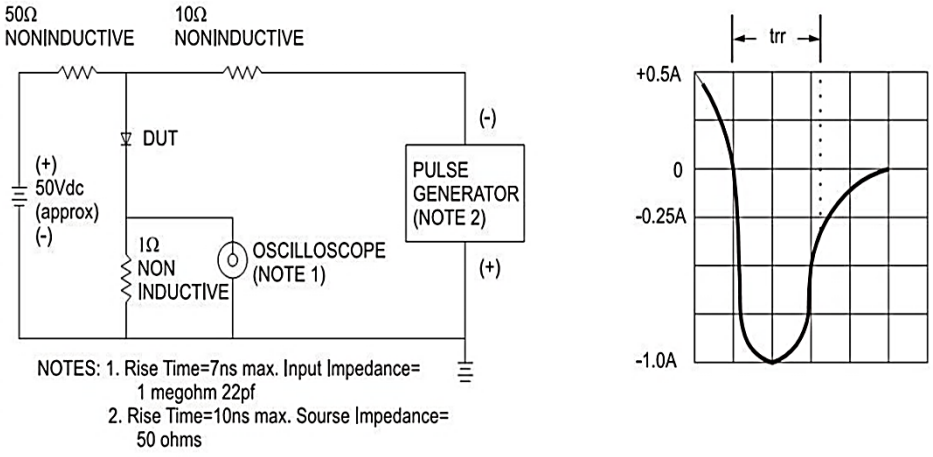
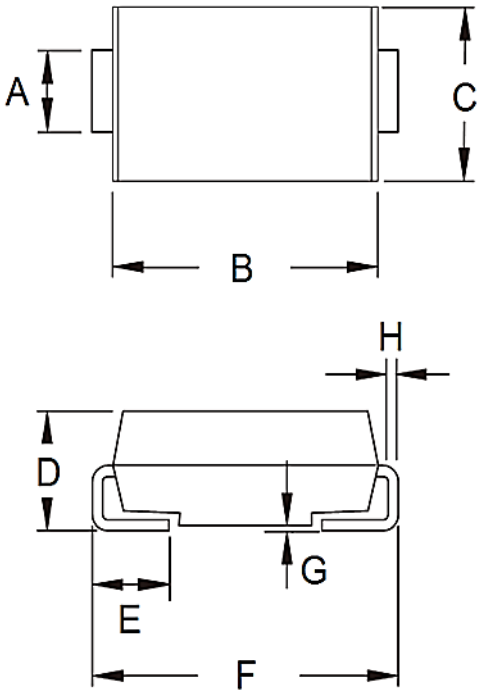


Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram



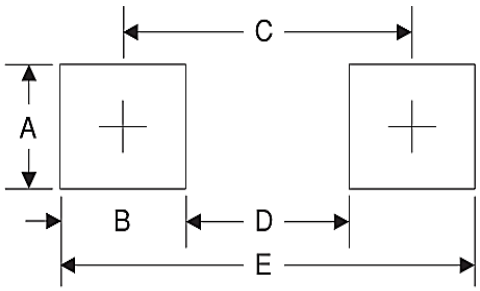
PACKAGE OUTLINE DIMENSIONS

DO-214AB (SMC)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	2.90	3.20	0.114	0.126
B	6.60	7.11	0.260	0.280
C	5.59	6.22	0.220	0.245
D	2.00	2.62	0.079	0.103
E	1.00	1.60	0.039	0.063
F	7.75	8.13	0.305	0.320
G	0.10	0.20	0.004	0.008
H	0.15	0.31	0.006	0.012

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	3.30	0.130
B	2.50	0.098
C	6.80	0.268
D	4.40	0.173
E	9.40	0.370

MARKING DIAGRAM

P/N =Marking Code
G =Green Compound
YW =Date Code
F =Factory Code

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HS3A HS3B HS3D HS3F HS3G HS3J HS3K HS3M HS3D R6G HS3B R6G HS3M R7G HS3J R6G HS3KHR6G HS3AHR6G HS3D R7G HS3M R7 HS3F R7 HS3D R7 HS3J R7G HS3DHR6 HS3A R6G HS3B R7G HS3F R7G HS3DHR6G HS3MHR7G HS3DHR7 HS3G R7G HS3J R7 HS3AHR7G HS3JHR7G HS3MHR6 HS3BHR6 HS3KHR6 HS3K R7G HS3FHR7G HS3BHR7G HS3BHR7 HS3FHR7 HS3K R6G HS3FHR6 HS3JHR7 HS3AHR7 HS3MHR7 HS3F R6G HS3AHR6 HS3GHR7 HS3DHR7G HS3KHR7 HS3A R7G HS3MHR6G HS3GHR6G HS3JHR6 HS3B R7 HS3K R7 HS3GHR6 HS3BHR6G HS3G R6G HS3JHR6G HS3M R6G HS3A R6 HS3GHR7G HS3KHR7G HS3FHR6G HS3G R7 HS3B R6 HS3A R7 HS3K R6 HS3J R6 HS3F R6 HS3M R6 HS3D R6 HS3G R6