

3A, 50V - 600V Super Fast Surface Mount Rectifier

FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Super fast recovery time for high efficiency
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

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

MECHANICAL DATA

- Case: DO-214AB (SMC)
- 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: 0.210g (approximately)

KEY PARAMETERS				
PARAMETER	VALUE	UNIT		
I _F	3	Α		
V_{RRM}	50 - 600	V		
I _{FSM}	100	Α		
T _{J MAX}	150	°C		
Package	DO-214AB (SMC)			
Configuration	Single die			









DO-214AB (SMC)



ABSOLUTE MAXIMUM RATINGS (T _A = 25°C unless otherwise noted)						<u> </u>				
PARAMETER	SYMBOL	ES3A	ES3B	ES3C	ES3D	ES3F	ES3G	ES3H	ES3J	UNIT
Marking code on the device		ES3A	ES3B	ES3C	ES3D	ES3F	ES3G	ES3H	ES3J	
Repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	500	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	105	140	210	280	350	420	٧
Forward current	I _F				(3				Α
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	100				А				
Junction temperature	TJ	- 55 to +150			°C					
Storage temperature	T _{STG}	- 55 to +150			°C					



THERMAL PERFORMANCE				
PARAMETER	SYMBOL	ТҮР	UNIT	
Junction-to-lead thermal resistance	R _{OJL}	12	°C/W	
Junction-to-ambient thermal resistance	R _{OJA}	47	°C/W	

PARAMETER		CONDITIONS	CONDITIONS SYMBOL		MAX	UNIT
Forward voltage ⁽¹⁾	ES3A ES3B ES3C ES3D	1 2A T 25°C	V _F	-	0.95	V
ES ES	ES3F ES3G	I _F = 3A, T _J = 25°C		-	1.30	V
	ES3H ES3J			-	1.70	V
Reverse current @ rated V _R ⁽²⁾		T _J = 25°C		-	10	μA
		T _J = 100°C	- I _R	-	500	μΑ
ES3A ES3B ES3C ES3D		4MH- 1/ 4 01/		45	-	pF
Junction capacitance	ES3F ES3G ES3H ES3J	1MHz, V _R = 4.0V	С	30	-	pF
Reverse recovery time		$I_F = 0.5A, I_R = 1.0A,$ $I_{rr} = 0.25A$	t _{rr}	-	35	ns

Notes:

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

ORDERING INFORMATION				
ORDERING CODE ⁽¹⁾	PACKAGE	PACKING		
ES3x	DO-214AB (SMC)	3,000 / Tape & Reel		

Notes:

1. "x" defines voltage from 50V(ES3A) to 600V(ES3J)



CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

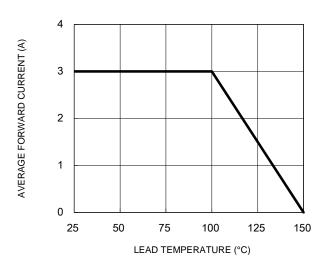


Fig.3 Typical Reverse Characteristics

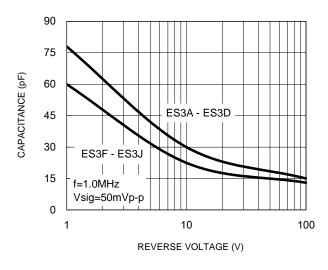
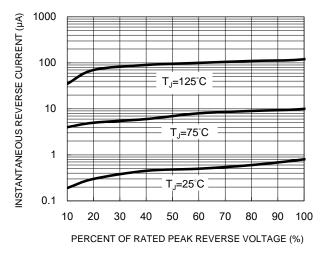


Fig.2 Typical Junction Capacitance

Fig.4 Typical Forward Characteristics



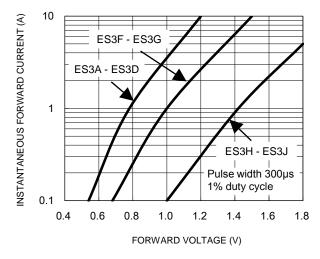
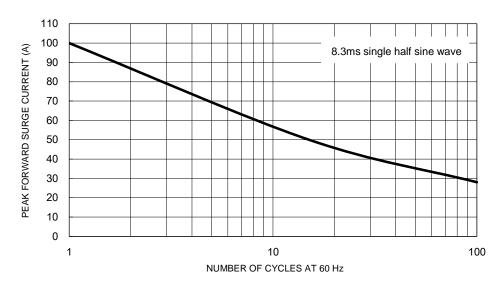


Fig.5 Maximum Non-Repetitive Forward Surge Current





CHARACTERISTICS CURVES

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

Fig.6 Typical Transient Thermal Impedance

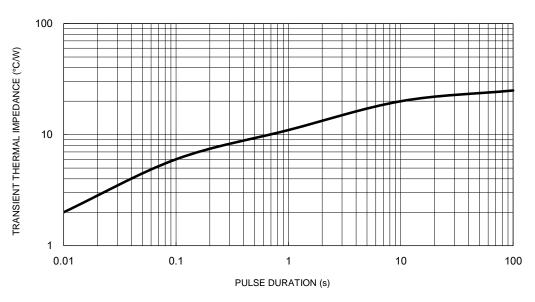
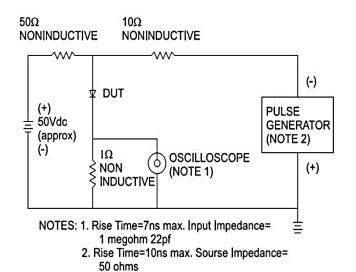
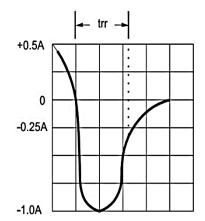


Fig.7 Reverse Recovery Time Characteristic and Test Circuit Diagram





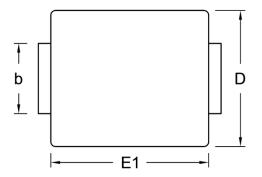
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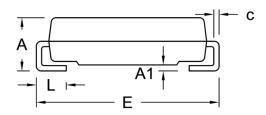




PACKAGE OUTLINE DIMENSIONS

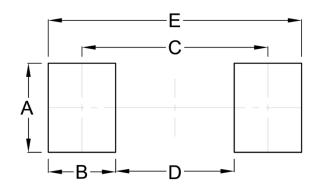
DO-214AB (SMC)





DIM	DIM. Unit (mn		n) Unit (inch)		
Dilvi.	Min.	Max.	Min.	Max.	
Α	2.00	2.62	0.079	0.103	
A1	0.10	0.20	0.004	0.008	
b	2.90	3.20	0.114	0.126	
С	0.15	0.31	0.006	0.012	
D	5.59	6.22	0.220	0.245	
E	7.75	8.13	0.305	0.320	
E1	6.60	7.11	0.260	0.280	
L	1.00	1.60	0.039	0.063	

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
Α	3.30	0.130
В	2.50	0.098
С	6.90	0.272
D	4.40	0.173
E	9.40	0.370

MARKING DIAGRAM



P/N = Marking Code G = Green Compound

ΥW = Date Code F = Factory Code



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