50A, 45V High Current Button Rectifier

FEATURES

- Low forward voltage drop, high efficiency
- T_J=175°C capability in DC forward mode suitable for high reliability and auto motive requirements
- Using Planar SKY barrier chip
- High surge capability
- Low cost construction utilizing void-free molded plastic technique
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC

ARS

Pb-Free

RoHS COMPLIANT

MECHANICAL DATA

Case: ARS

Molding compound: UL flammability classification rating 94V-0

Part no. with suffix "H" means AEC-Q101 qualified

Terminal: Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

Weight: 1.73 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)			
PARAMETER	SYMBOL	ARS5045	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	45	V
Maximum RMS voltage	V_{RMS}	32	V
Maximum DC blocking voltage	V_{DC}	45	V
Maximum average forward rectified current	$I_{F(AV)}$	50	A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	720	A
Maximum instantaneous forward voltage (Note 1) @ 50 A	V_F	0.55	V
Maximum reverse current @ Rated V_R	I_R	500	μA
Typical reverse recovery time (Note 2)	t_{rr}	150	ns
Typical junction capacitance (Note 3)	C_J	2.7	nF
Typical thermal resistance	$R_{\theta JL}$	2.5	°C/W
Junction temperature range - in DC forward mode	T_J	- 55 to +175	°C
Storage temperature range	T_{STG}	- 55 to +175	°C

Note 1: Pulse test with PW=300μs, 1% duty cycle

Note 2: Test conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Note 3: Measured at 1 MHz and applied reverse voltage of 4.0V DC.

ORDERING INFORMATION				
PART NO.	PART NO. SUFFIX	PACKING CODE	PACKAGE	PACKING
ARS5045	H	B0	ARS	1,000 / Bulk packing

EXAMPLE				
EXAMPLE PART NO.	PART NO.	PART NO. SUFFIX	PACKING CODE	DESCRIPTION
ARS5045HB0	ARS5045	H	B0	AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 MAXMUM FORWARD CURRENT DERATING CURVE

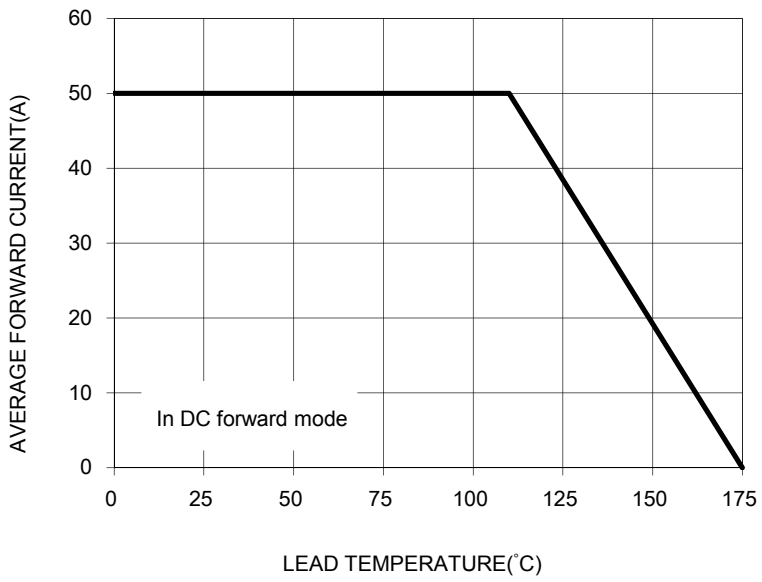


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

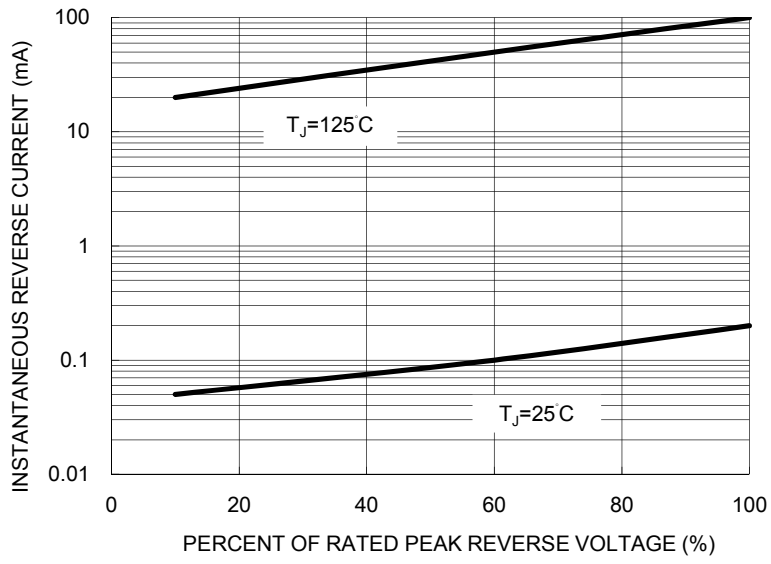


FIG. 3 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

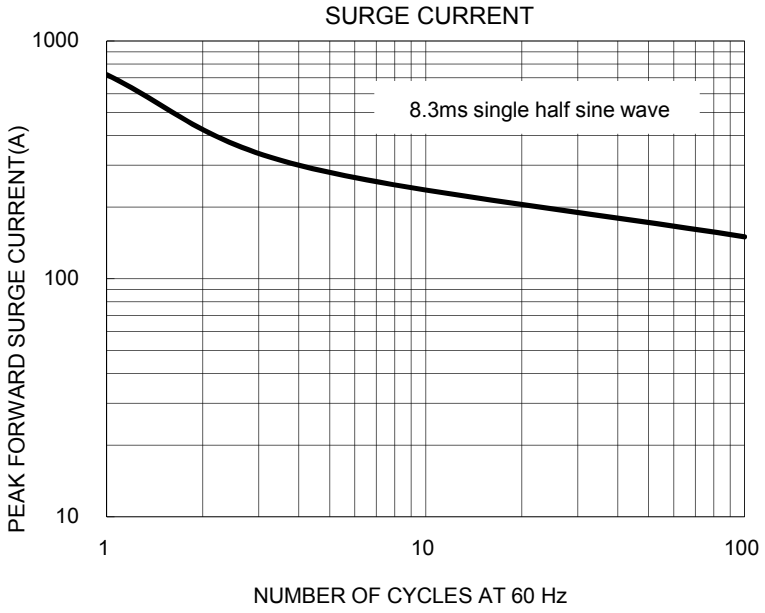


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

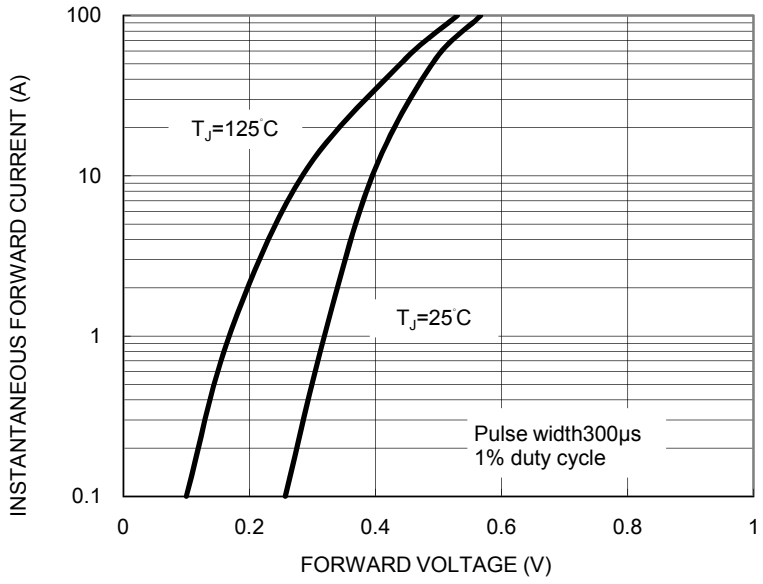
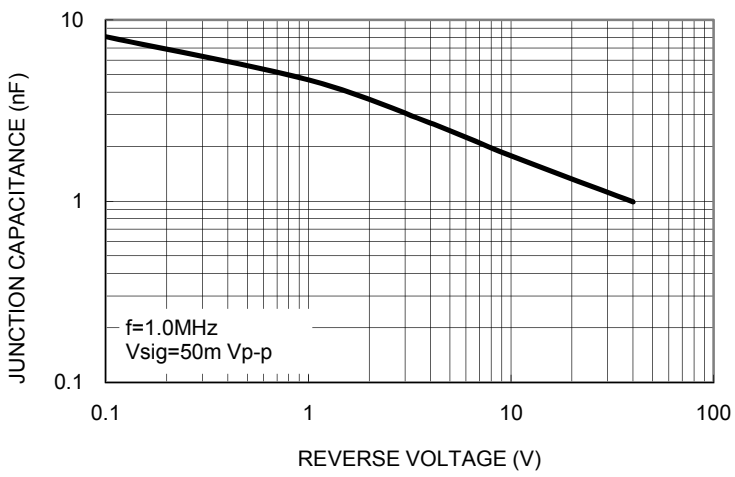


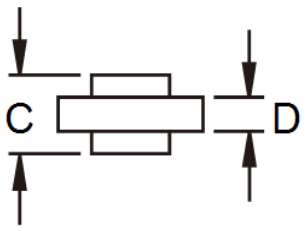
FIG. 5 TYPICAL JUNCTION CAPACITANCE



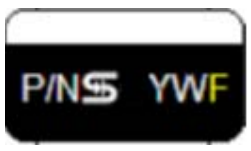
PACKAGE OUTLINE DIMENSIONS

ARS

DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	5.50	5.70	0.217	0.224
B	8.30	8.90	0.327	0.350
C	6.00	6.40	0.236	0.252
D	4.20	4.70	0.165	0.185



MARKING DIAGRAM



P/N = S45
YW = Date Code
F = Factory Code

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