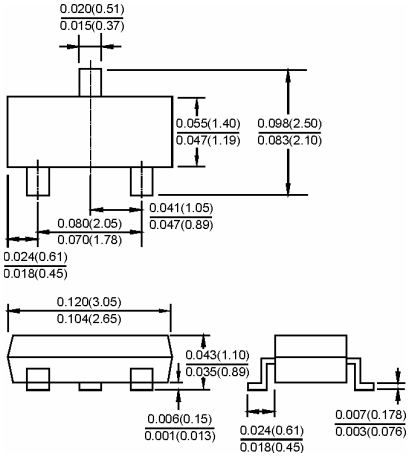
TAIWAN SEMICONDUCTOR

BAS40 / -04 / -05 / -06

Surface Mount Schottky Barrier Diode

SOT-23

Pb RoHS COMPLIANCE



Dimensions in inches and (millimeters)

Features

- ✧ Low turn-on voltage
- ✧ Fast switching
- ✧ PN junction guard Ring for transient and ESD protection

Mechanical Data

- ✧ Case: SOT-23, Molded plastic
- ✧ Terminals: Solderable per MIIL-STD-202, Method 208
- ✧ Marking & Polarity: See diagram below
- ✧ Weight: 0.008 grams (approx.)

Maximum Ratings T_A=25℃ unless otherwise specified

Type Number	Symbol	BAS40	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	40	V
Forward Continuous Current (Note 1)	I_{FM}	200	mA
Non-Repetitive Peak Forward Surge Current @ t ≦1.0s	I_{FSM}	600	mA
Power Dissipation (Note 1)	Pd	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	357	°C/W
Operating Junction Temperature Range	T_J	-55 to + 125	°C
Storage Temperature Range	T_{STG}	-65 to + 150	°C

Electrical Characteristics

Type Number	Symbol	Min	Typ	Max	Units
Reverse Breakdown Voltage IR=10uA	$V_{(BR)}$	40	-	-	V
Reverse Leakage Current tp<300us, VR=30V	I_R	--	20	200	nA
Forward Voltage Drop tp=300us, IF=1.0mA tp<300us, IF=40mA	V_F	--	- -	380 1000	mV
Junction Capacitance VR=0, f=1.0MHz	Cj	-	4.0	5.0	pF
Reverse Recovery Time (Note 2)	trr	-	--	5.0	nS

Notes: 1. Valid Provided that Terminals are Kept at Ambient Temperature.

2. Reverse Recovery Test Conditions: I_F=I_R=10mA, Irr=1.0mA, R_L=100Ω.

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RATINGS AND CHARACTERISTIC CURVES (BAS40 / -04 / -05 / -06)

FIG.1- POWER DERATING CURVE

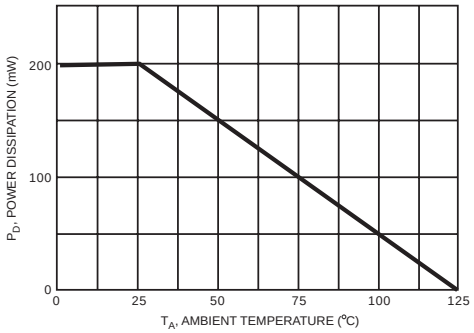


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

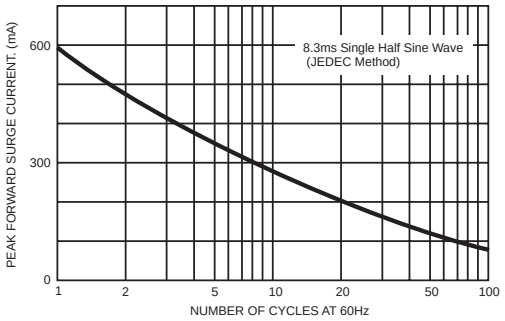


FIG.3- TYPICAL FORWARD CHARACTERISTICS

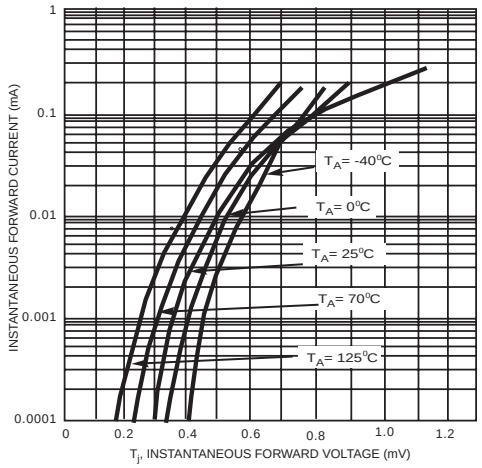


FIG.4- TYPICAL REVERSE CHARACTERISTICS

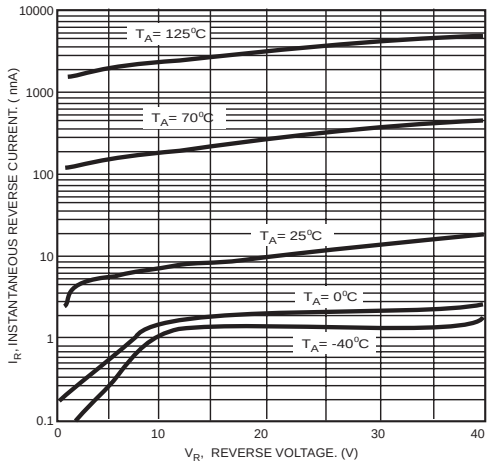


FIG.5- TYPICAL TOTAL CAPACITANCE VS REVERSE VOLTAGE

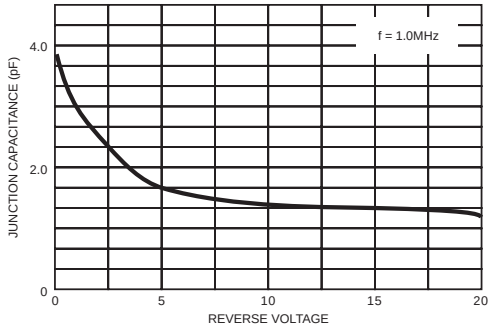
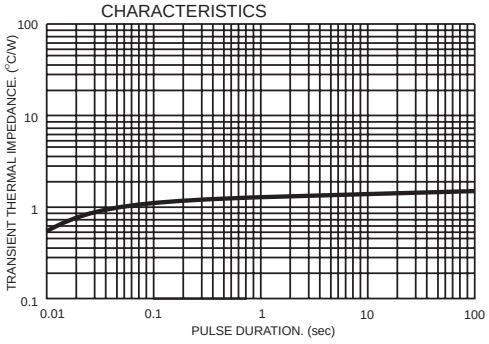


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS



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