

SOT-23 Plastic-Encapsulate Diodes



S9015

SOT-23




RoHS COMPLIANT

DEVICE MARKING
S9015 = M6

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	-45	Vdc
Collector–Base Voltage	V_{CBO}	-50	Vdc
Emitter–Base Voltage	V_{EBO}	-5.0	Vdc
Collector Current — Continuous	I_c	-100	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR– 5 Board, (1) $T_A = 25^\circ\text{C}$	P_D	200	mW
Junction and Storage Temperature	T_J, T_{stg}	- 55 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Max	Unit
Collector–Emitter Breakdown Voltage(3) ($I_c = -0.1 \text{ mAdc}$, $I_E = 0$)	$V_{(BR)CEO}$	-45	–	Vdc
Collector–Base Breakdown Voltage ($I_c = -100 \mu\text{Adc}$, $I_E = 0$)	$V_{(BR)CBO}$	-50	–	Vdc
Emitter–Base Breakdown Voltage ($I_E = -100 \mu\text{Adc}$, $I_c = 0$)	$V_{(BR)EBO}$	-5.0	–	Vdc
Collector cut-off current ($V_{CB} = -50 \text{ Vdc}$, $I_E = 0$)	I_{CBO}	–	-0.1	μAdc
Emitter cut-off current ($V_{EB} = -5 \text{ Vdc}$, $I_c = 0$)	I_{EBO}	–	-0.1	μAdc

1. FR–5 = 1.0 x 0.75 x 0.062 in.
2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.
3. Pulse Test: Pulse Width <300 μs , Duty Cycle <2.0%.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Continued)
ON CHARACTERISTICS (3)

Characteristic	Symbol	Min	Max	Unit
DC Current Gain	h _{FE}			—
(I _C = -1.0 mA _{dc} , V _{CE} = -5 V _{dc})		200	1000	
Collector–Emitter Saturation Voltage	V _{CE(sat)}			V _{dc}
(I _C = -100 mA _{dc} , I _B = -10 mA _{dc})(3)		—	-0.3	
Base–Emitter Saturation Voltage(3)	V _{BE(sat)}			V _{dc}
(I _C = -100 mA _{dc} , I _B = -10mA _{dc})		—	-1.0	

SMALL–SIGNAL CHARACTERISTICS

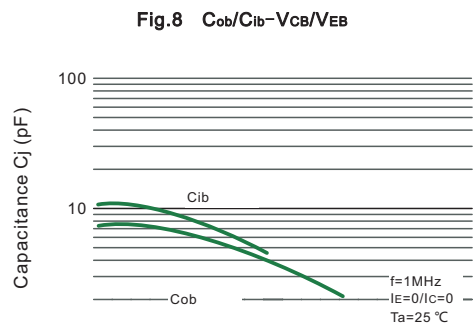
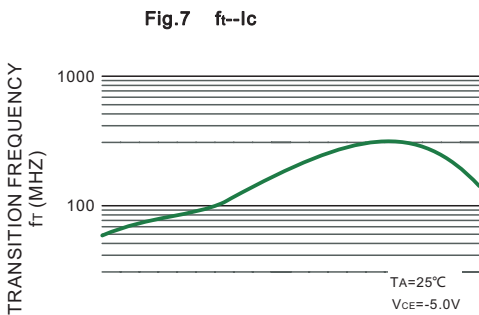
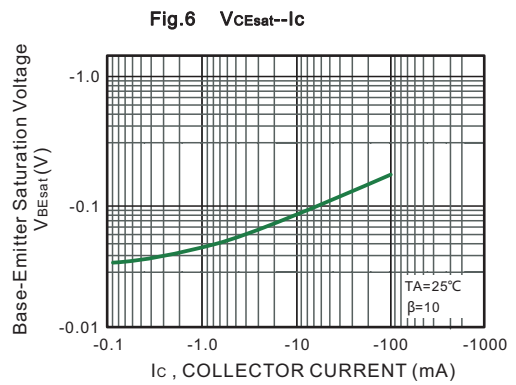
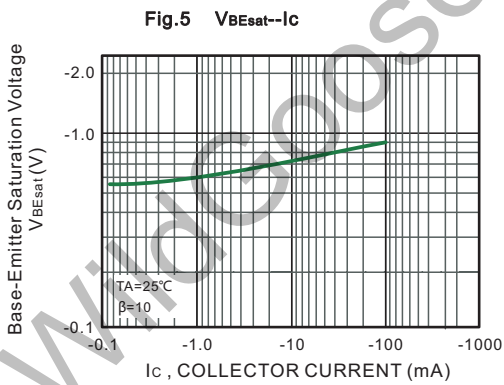
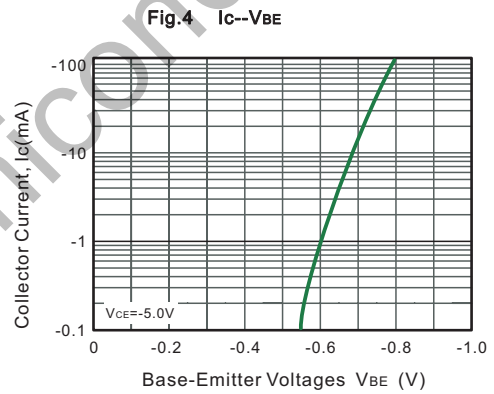
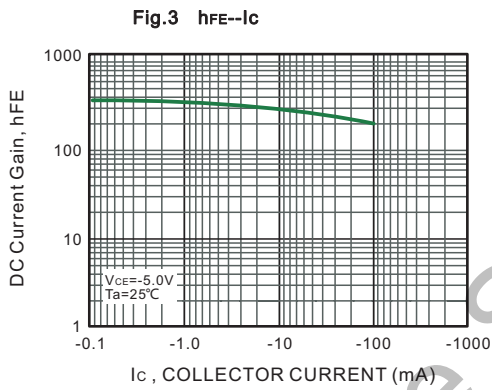
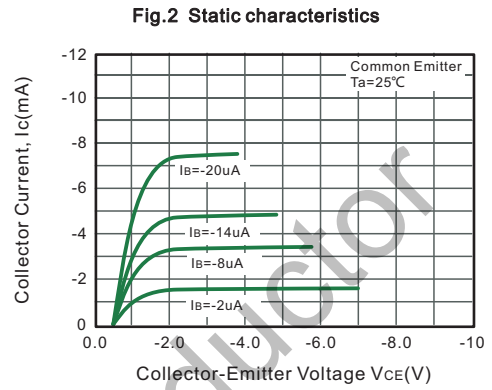
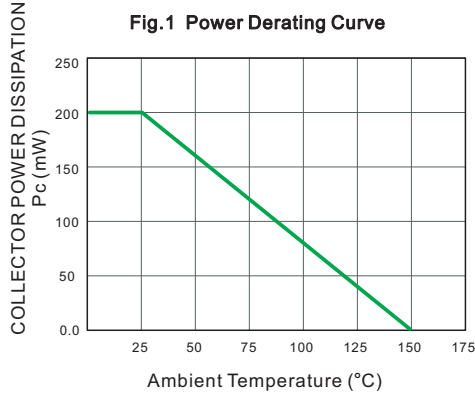
Current–Gain — Bandwidth Product (I _C = -10mA _{dc} , V _{CE} = -5.0V _{dc} , f = 30MHz)	f _r	150	—	MHz
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CLASSIFICATION OF h_{FE}

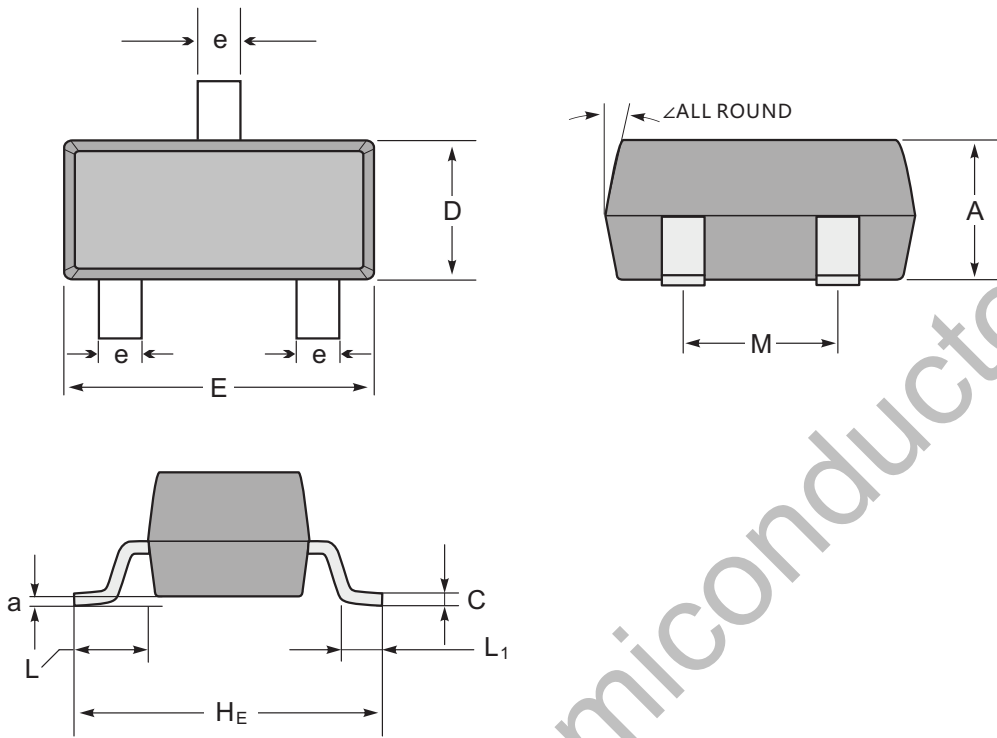
Rank	L	H
Range	200-450	400-1000

Typical Characteristics

TYPICAL CHARACTERISTICS



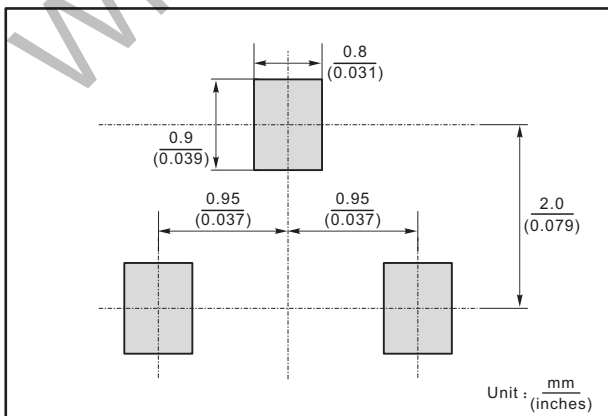
SOT-23 Package Outline Dimensions



SOT-23 mechanical data

UNIT	A	C	D	E	HE	e	M	L	L ₁	a	∠	
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.15	12°
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7		0.0		
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	6	
	min	35	3	47	110	87	12	67		0.0		

The recommended mounting pad size



Marking

Type number	Marking code
S9015	M6

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