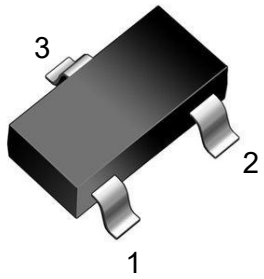
Features

- Low profile package
- Ideal for automated placement
- Power Dissipation of 200mW
- High Stability and High Reliability
- RoHS Compliant

Mechanical Data

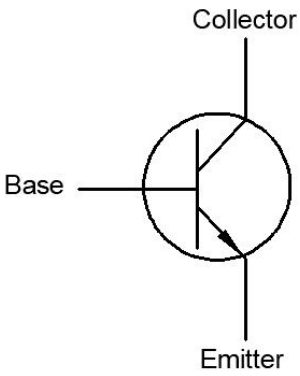
- Package: SOT-323
- Lead Finish:Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Tape Reel :3000pcs

Appearance Symbo



Package：SOT-323

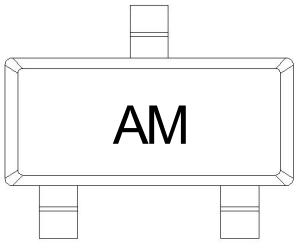
1：Base
2：Emitter
3：Collector



Applications

- amplifying signal
- Electronic switch
- Oscillating circuit
- Variable resistance

Marking Information



AM= Marking Code

bsolute Maximum Ratings (T=25℃ unless otherwise noted)

Parameter	Symbol	Value	Units
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current - Continuous	I_C	200	mA
Collector Power Dissipation	P_C	200	mW
Operating Junction temperature	T_J	-55 to +150	℃
Storage Temperature Range	T_{STG}	-55 to +150	℃

Electrical Characteristics (T=25 unless otherwise note

Parameter	Symbol	Test conditions	Min		Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10uA	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10uA	6			V
Collector Emitter cut-off current	I_{CES}	V_{CE}=30V			50	nA
Emitter Base Cutoff Current	I_{EBO}	V_{EB}=3V			50	nA
DC current gain	h_{FE}	V_{CE}=1V, I_C=0.1mA	40			
		V_{CE}=1V, I_C=1mA	70			
		V_{CE}=1V, I_C=10mA	100		300	
		V_{CE}=1V, I_C=50mA	60			
		V_{CE}=1V, I_C=100mA	30			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA, I_B=1mA			0.2	V
		I_C=50mA, I_B=5mA			0.3	V
Base -emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA, I_B=1mA	0.65		0.85	V
		I_C=50mA, I_B=5mA			0.95	V
Transition frequency	f_T	V_{CE}=20V, I_E=10mA,f=100MHz	300			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=100KHz			4	pF
Delay time	t_d	V_{CC}=3V, $V_{BE(off)}$=0.5V I_C=10mA, I_{B1}=1mA			35	ns
Rise time	t_r				35	ns
Storage time	t_s	V_{CC}=3V, I_C=10mA, I_{B1}=I_{B2}=1mA			200	ns
Fall time	t_f				50	ns

Typical Characteri ti s

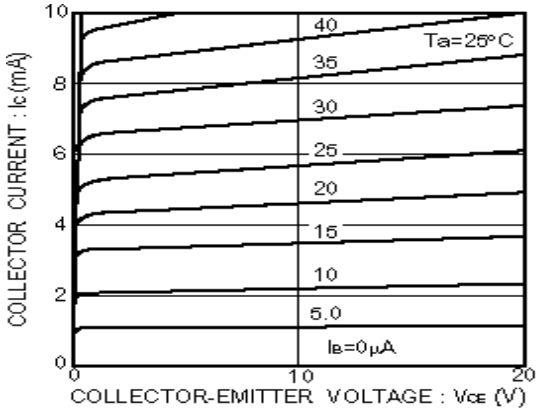


Fig.1 Grounded emitter output characteristics

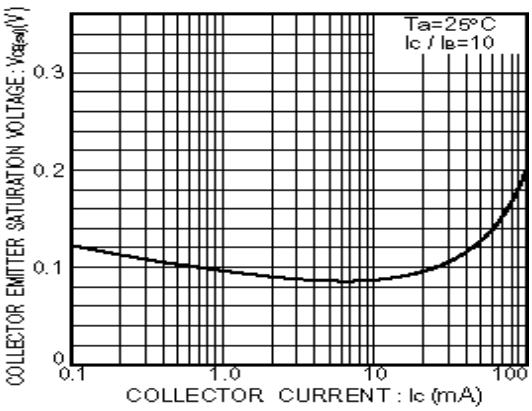


Fig.2 Collector-emitter saturation voltage vs. collector current

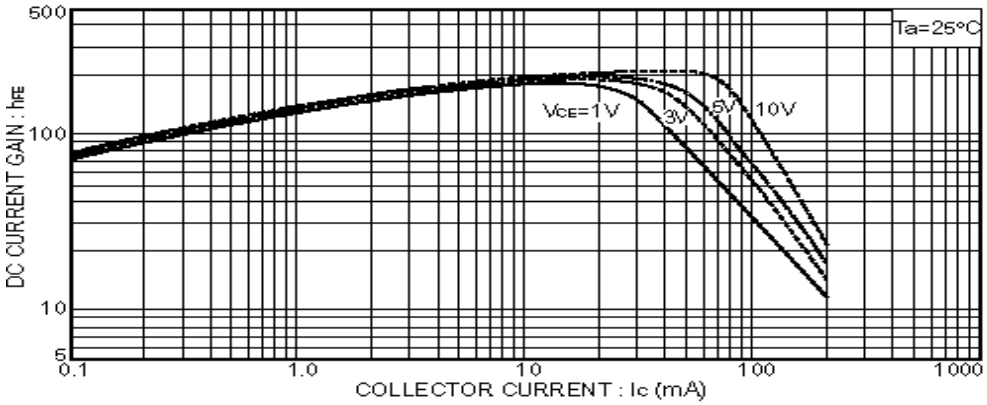


Fig.3 DC current gain vs. collector current (I)

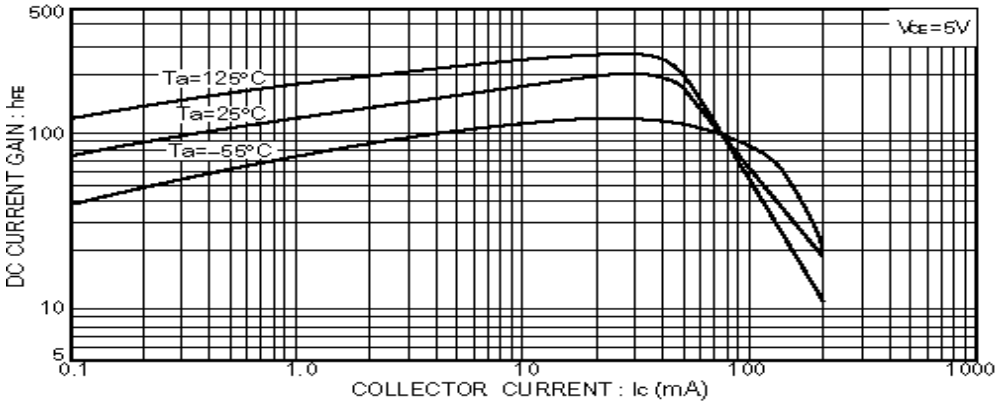


Fig.4 DC current gain vs. collector current (II)

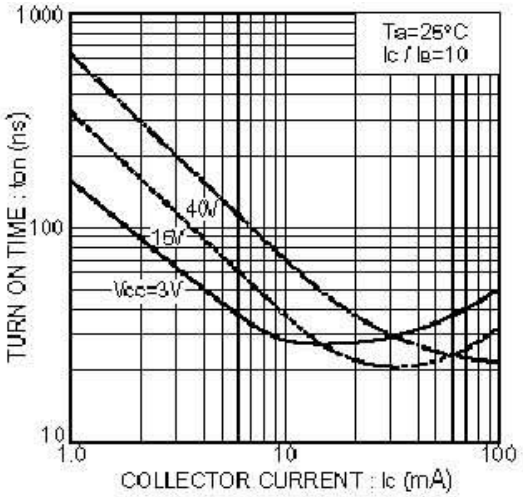


Fig.5 Turn-on time vs. collector current

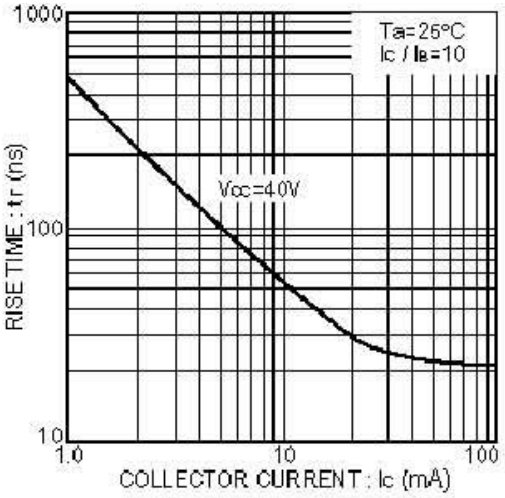


Fig.6 Rise time vs. collector current

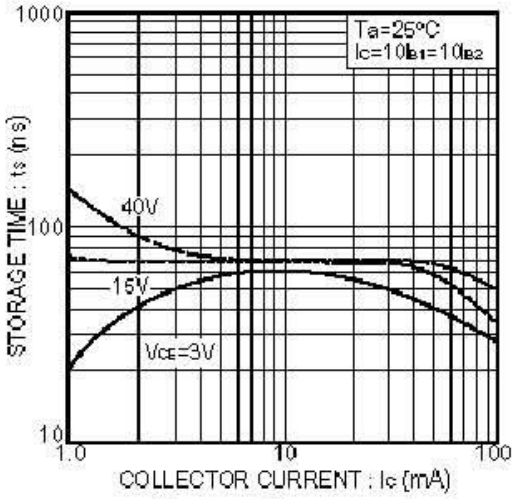


Fig.7 Storage time vs. collector current

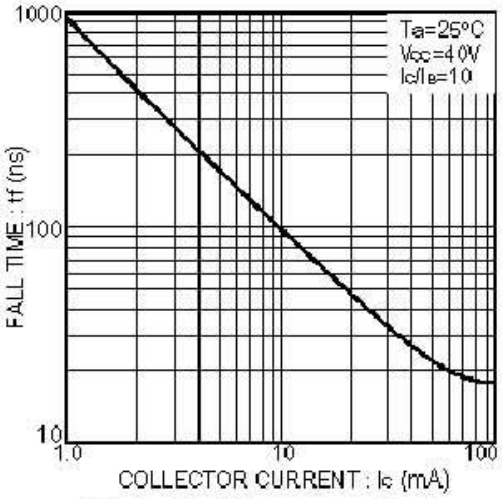


Fig.8 Fall time vs. collector current

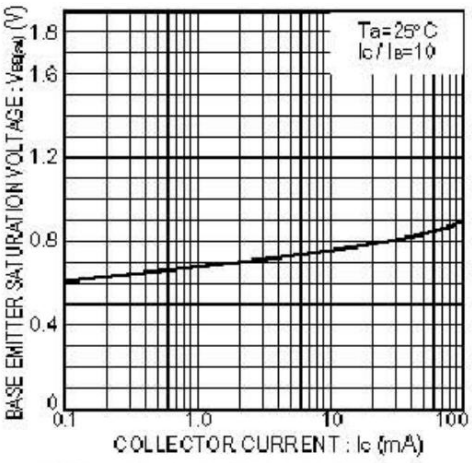


Fig.9 Base-emitter saturation voltage vs. collector current

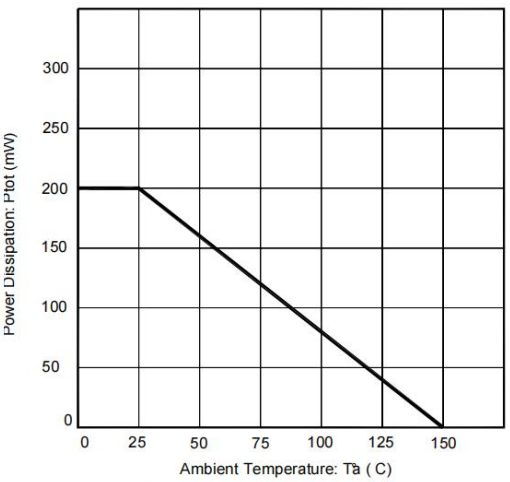
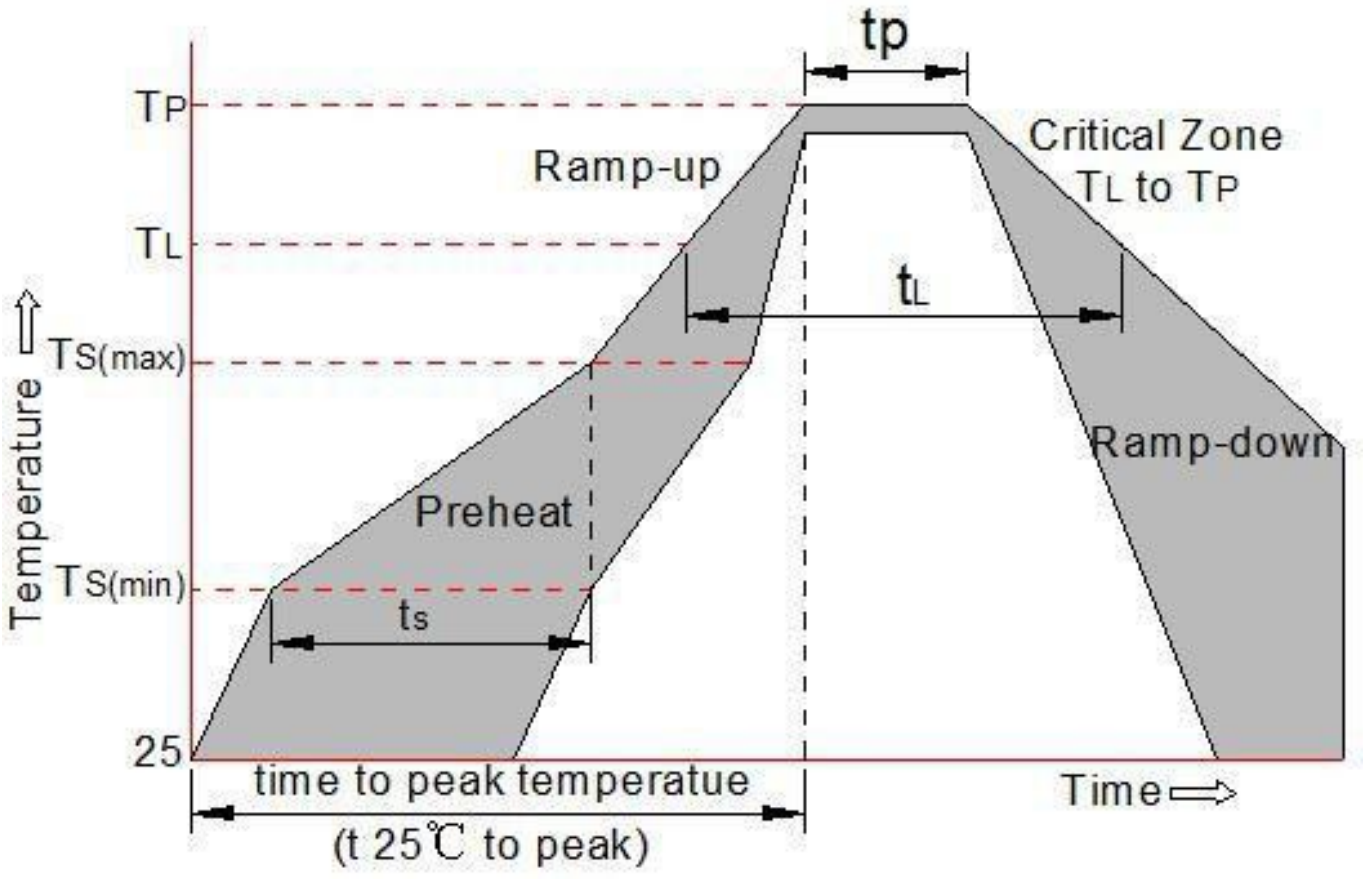


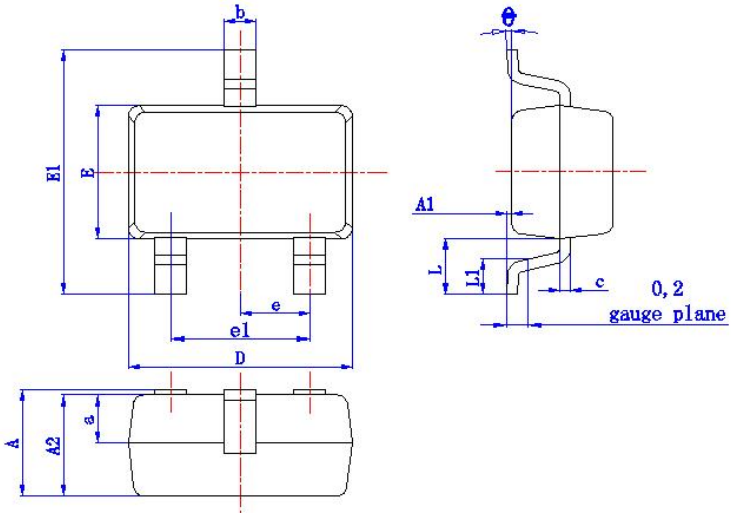
Fig.10 Power Dissipation vs Ambient Temperature

Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

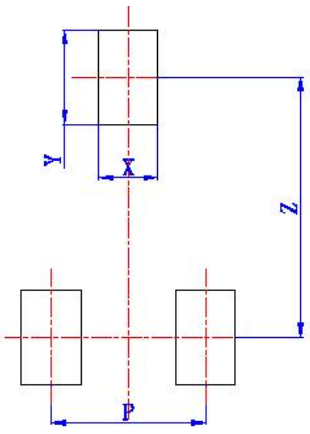


Package mechanical data



Symbol	Millimeters	
	min	max
A	0.9	1.1
A1	0	0.1
A2	0.9	1.0
a	(0.45)	
D	2.0	2.2
E	1.15	1.35
E1	2.15	2.45
e	(0.65)	
e1	1.2	1.4
b	0.25	0.35
c	0.08	0.15
L	(0.525)	
L1	0.26	0.46
θ	0°	8°

Suggested Land Pattern



Symbol	Dimension in Millimeters
	Typ.
X	(0.5)
Y	(0.8)
Z	(1.8)
P	(1.3)

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