RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

MMBT2222A

P/N suffix V means AEC-Q101 qualified e.g:MMBT2222AV

P/N suffix V means Halogen-free

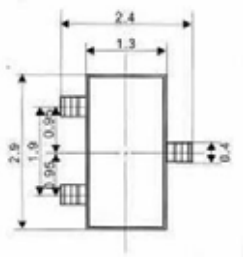
MSL:level 2

Silicon NPN SMD triode

1: base 2: emitter 3: collector

Small and medium-sized power amplifier

Ouline example SOT-23





Type	Marking
MMBT2222A	1P

Maximum ratings(Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	75	V
Collector-Emitter Breakdown Voltage	V_{CEO}	40	V
Emitter-Base Breakdown Voltage	V_{EBO}	6	V
Collector Current	I_C	600	mA
Collector Power Dissipation	P_C	300	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	℃/W
Junction Temperature	T_J	-65~150	℃
Storage Temperature	Tstg	-65~150	℃

Electrical Characteristics (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Max	Unit
Collector-Base Breakdown Voltage	V_{CBO}	IC=100uA IE=0	75		V
Collector-Emitter Breakdown Voltage	V_{CEO}	IC=1mA IB=0	40		V
Emitter-Base Breakdown Voltage	V_{EBO}	IE=100uA IC=0	6		V
Collector Cutoff Current	I_{CBO}	VCB=40V IE=0		10	nA
Collector Cutoff Current	I_{CEX}	VCB=30V VEB(off)=3V		10	nA
Emitter Cutoff Current	I_{EBO}	VCE=5V IB=0		100	nA
DC Current Gain	$HFE_{(1)}$	VCE=10V IC=10mA	75		
	$HFE_{(2)}$	VCE=10V IC=150mA	100	300	
	$HFE_{(3)}$	VCE=10V IC=500mA	42		
Collector-Emitter Saturation Voltage	VCE(sat)	IC=500mA IB=50mA		1.0	V
		IC=150mA IB=15mA		0.3	V
Collector-Base Saturation Voltage	VBE(sat)	IC=500mA IB=50mA		2.0	V
		IC=150mA IB=15mA		1.2	V
Transition frequency	f_T	VCE=20V IC=20mA f=100MHz	300		MHz

2025-06/17
REV:F

RATING AND CHARACTERISTICS CURVES (MMBT2222A)

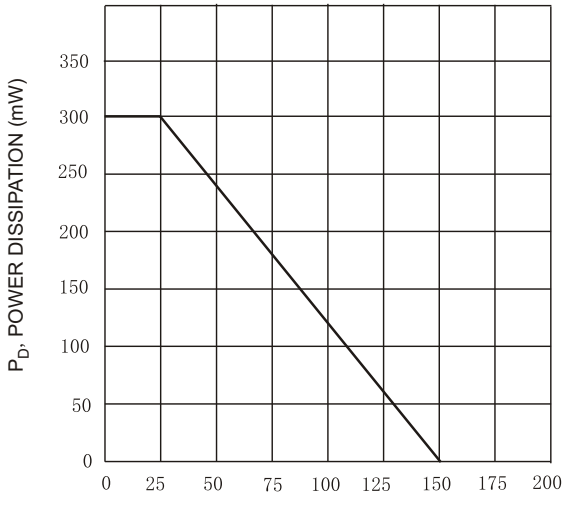


Fig. 1, Max Power Dissipation vs Ambient Temperature

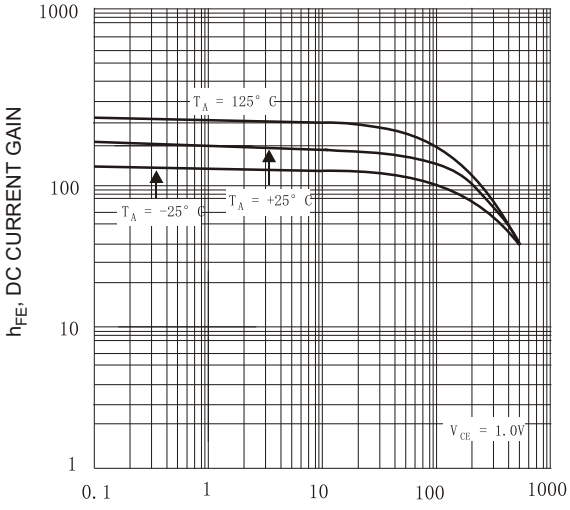


Fig. 2, Typical DC Current Gain vs Collector Current

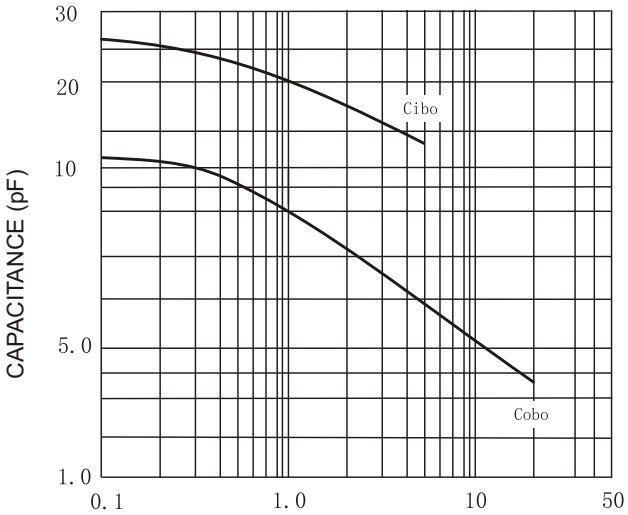


Fig. 3 Typical Capacitance

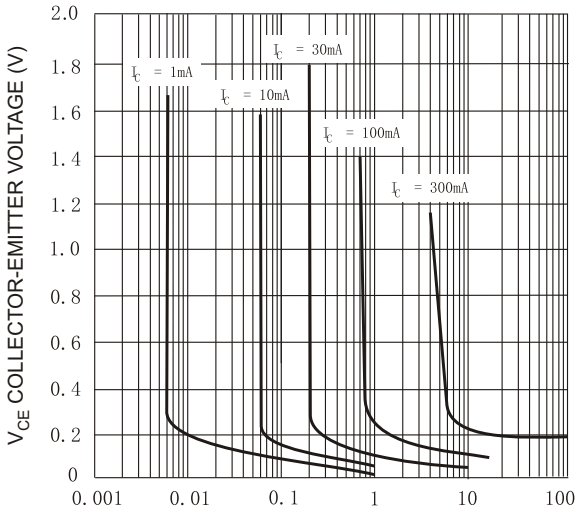


Fig. 4 Typical Collector Saturation Region

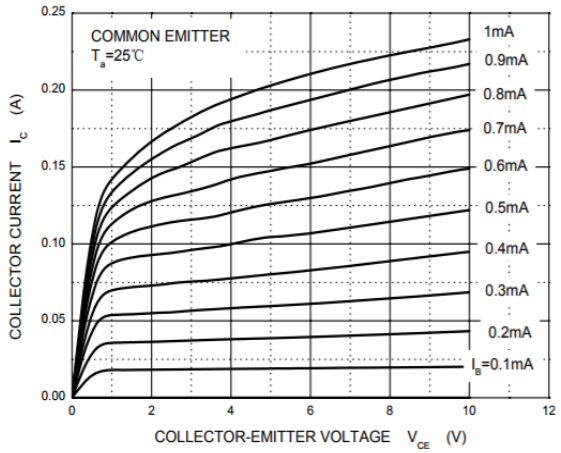
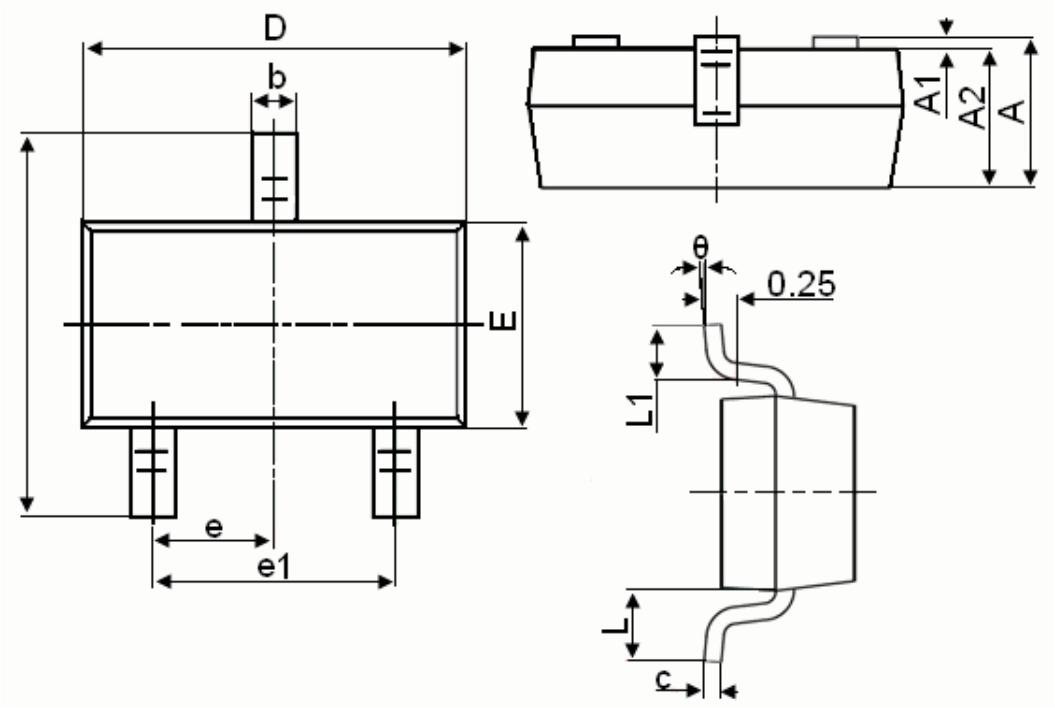


Fig.5 Static Characteristic

SOT-23 Package Information



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

Notes

1. All dimensions are in millimeters.
2. Tolerance ±0.10mm (4 mil) unless otherwise specified
3. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 5 mils.
4. Dimension L is measured in gauge plane.
5. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.

PACKAGING OF DIODE

REEL PACK

PACKAGE	PACKING CODE	REEL (EA)	COMPONENT SPACE(mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SOT-23/-3L	-T	3,000	---	---	178	440*440*240	180,000	8.0

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