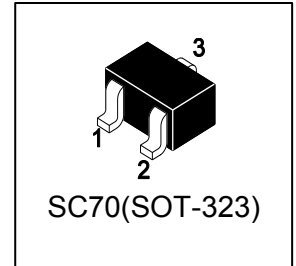


## 1. FEATURES

- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

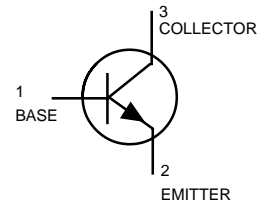


## 2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
MBT2222AWT1G	P1	3000/Tape&Reel
MBT2222AWT3G	P1	10000/Tape&Reel

## 3. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	V <sub>CEO</sub>	40	V
Collector–Base Voltage	V <sub>CBO</sub>	75	V
Emitter–Base Voltage	V <sub>EB0</sub>	6	V
Collector Current — Continuous	I <sub>C</sub>	600	mA



## 4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR-5 Board @ TA = 25°C	PD	150	mW
Thermal Resistance, Junction–to–Ambient	R <sub>θJA</sub>	833	°C/W
Junction and Storage temperature	T <sub>J</sub> , T <sub>stg</sub>	-55~+150	°C

## 5. ELECTRICAL CHARACTERISTICS (Ta= 25°C )

### OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max	Unit
Collector–Emitter Breakdown Voltage (IC = 10 mA, IB = 0)	VBR(CEO)	40	-	-	V
Collector–Base Breakdown Voltage (IC = 10 μA, IE = 0)	VBR(CBO)	75	-	-	V
Emitter–Base Breakdown Voltage (IE = 10 μA, IC = 0)	VBR(EBO)	6	-	-	V
Collector Cutoff Current (VCE = 60 V, VBE = 3.0V)	ICEX	-	-	10	nA
Collector-Emitter cutoff Current (VCE = 40V, IB=0)	ICEO	-	-	10	μA
Collector Cutoff Current (VCB = 60 V, IE = 0)	ICBO	-	-	0.01	μA
Emitter Cutoff Current (VBE = 5.0 V, IC = 0)	IEBO	-	-	50	nA
Base Cutoff Current (VCE = 60 V, VEB = 3.0 V)	IBL	-	-	20	nA

### ON CHARACTERISTICS (Note 1.)

DC Current Gain (IC = 0.1 mA, VCE = 10 V) (IC = 1.0 mA, VCE = 10 V) (IC = 10 mA, VCE = 10 V) (IC = 150 mA, VCE = 10 V) (IC = 500 mA, VCE = 10 V)	HFE	35 50 75 100 40	- - - - -	- - - 300 -	
Collector–Emitter Saturation Voltage(Note 1) (IC = 150 mA, IB = 15 mA) (IC = 500 mA, IB = 50 mA)	VCE(sat)	- -	- -	0.3 1	V
Base–Emitter Saturation Voltage(Note 1) (IC = 150 mA, IB = 15 mA) (IC = 500 mA, IB = 50 mA)	VBE(sat)	0.6 -	- -	1.2 2	V

### SMALL–SIGNAL CHARACTERISTICS

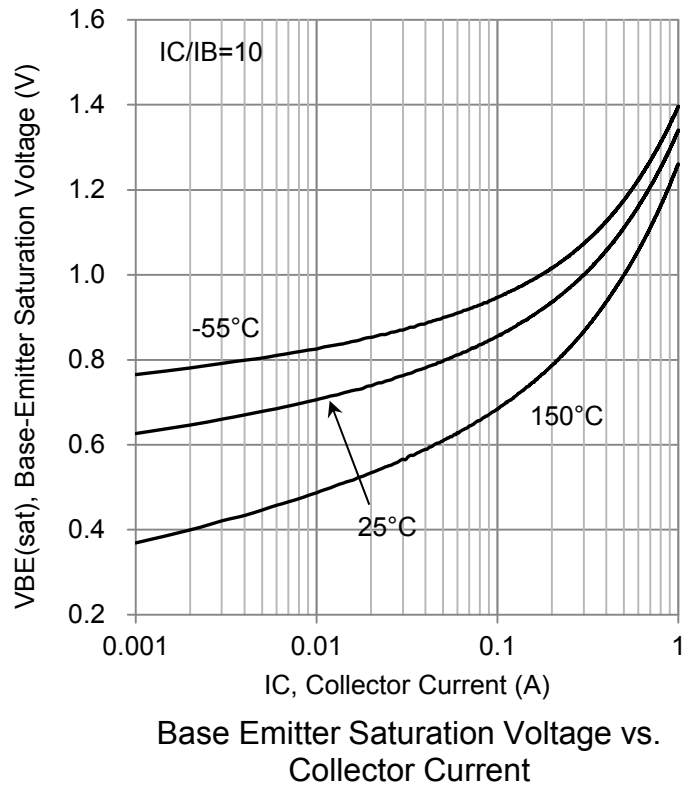
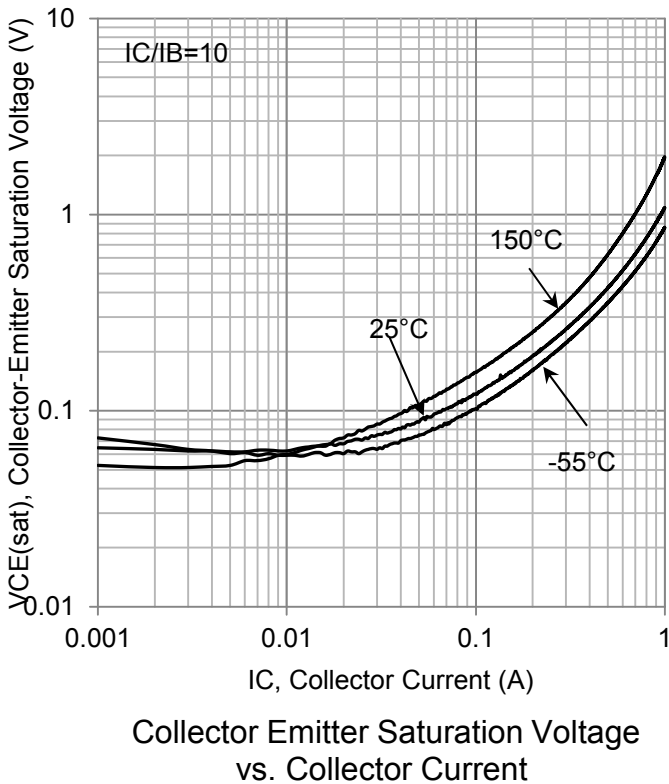
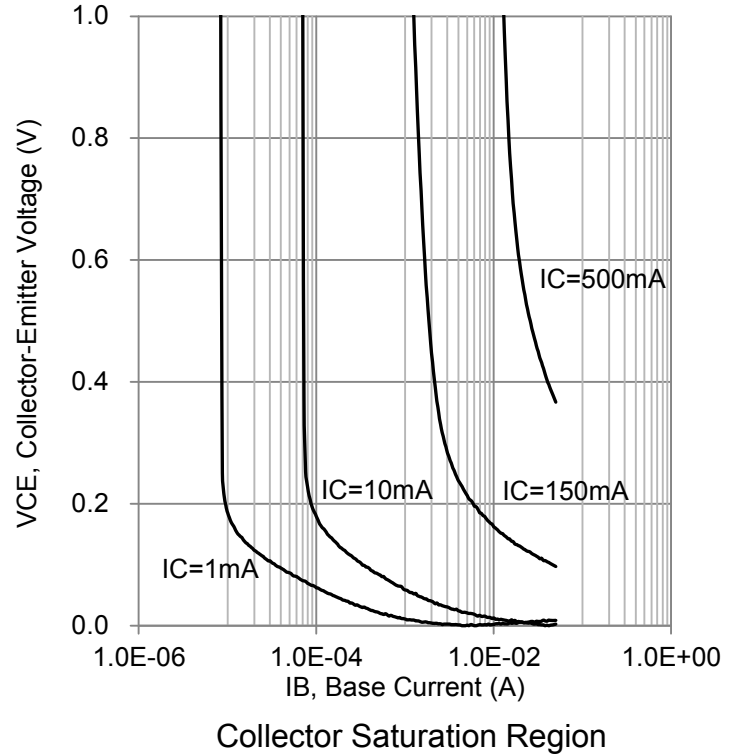
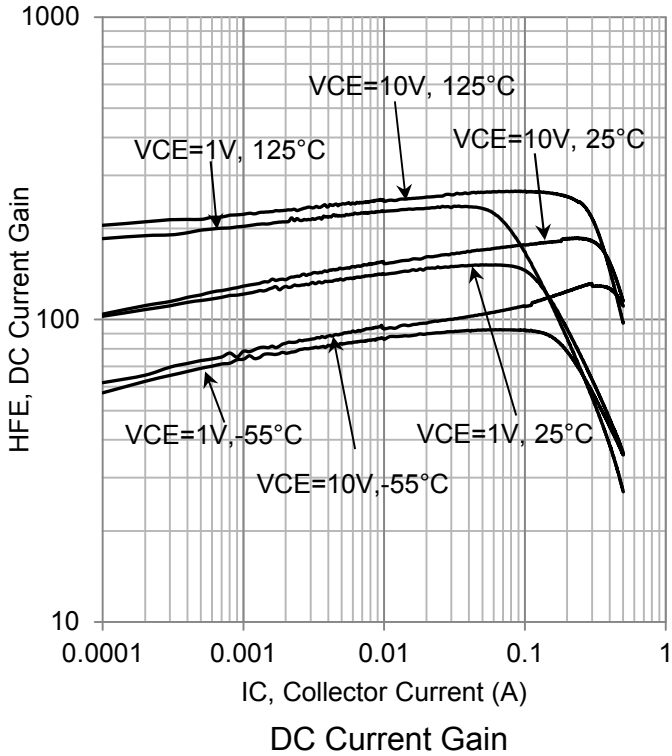
Current–Gain — Bandwidth Product (IC = 20mA, VCE= 20V, f = 100MHz)	fT	300	-	-	MHz
Output Capacitance (VCB = 10 V, IE = 0, f = 1.0 MHz)	Cobo	-	-	8	pF
Input Capacitance (VEB = 0.5 V, IC = 0, f = 1.0 MHz)	Cibo	-	-	30	pF

### SWITCHING CHARACTERISTICS

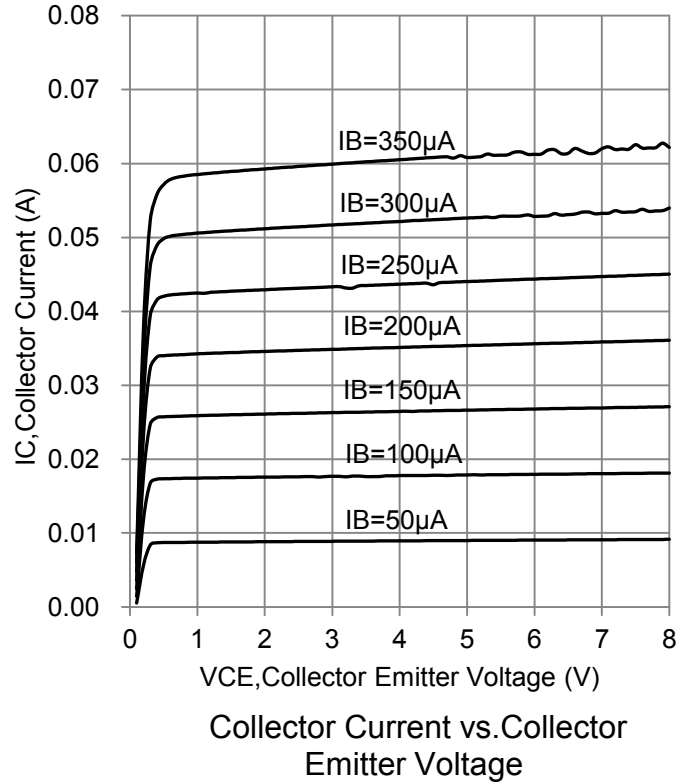
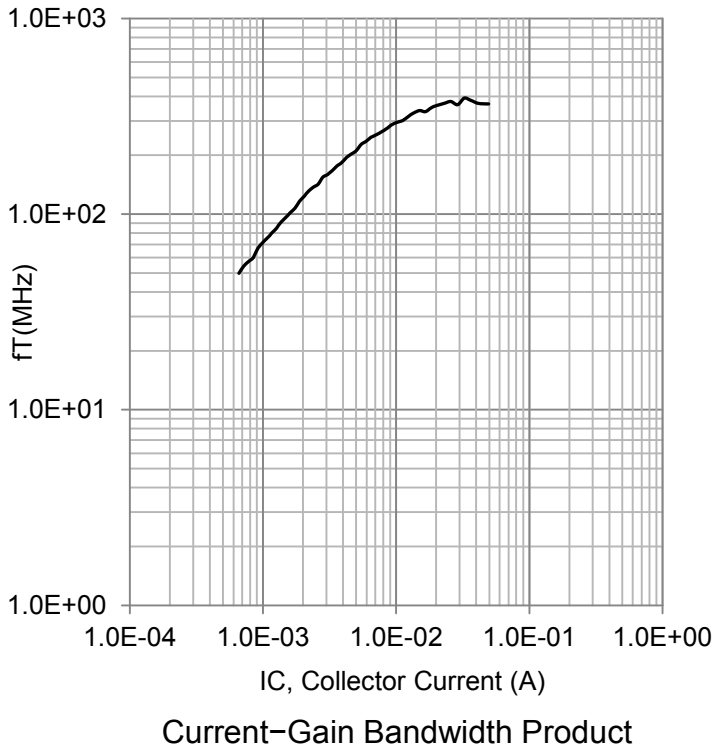
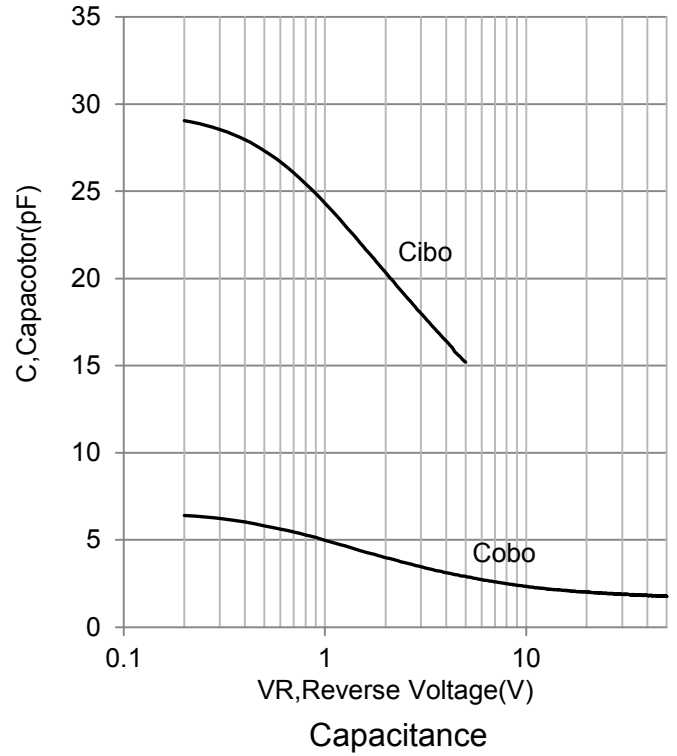
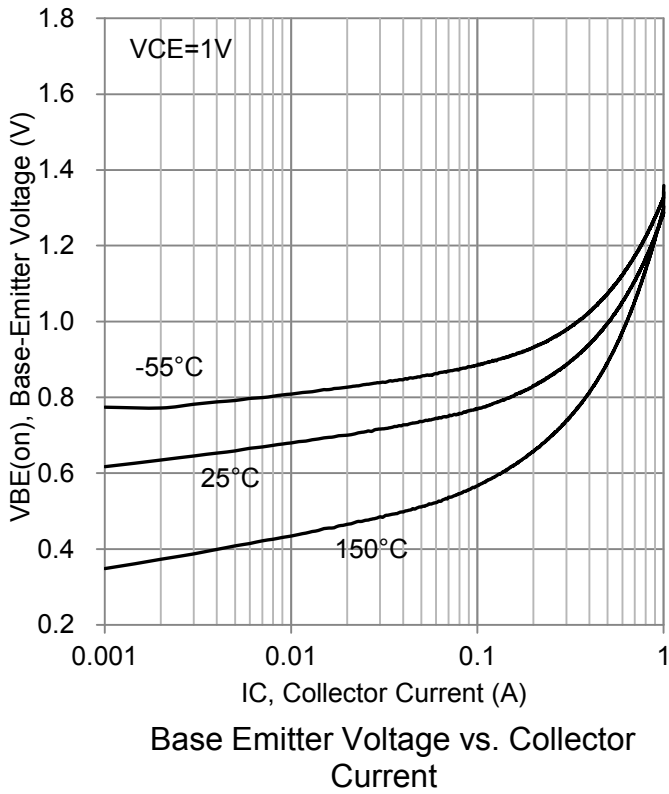
Delay Time	(VCC = 30 V, VEB=-0.5V, IC = 150mA, IB1 = 15 mA)	td	-	-	10	ns
Rise Time		tr	-	-	25	
Storage Time	(VCC = 30 V, IC = 150 mA, IB1 = IB2 = 15 mA)	ts	-	-	225	
Fall Time		tf	-	-	60	

1.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

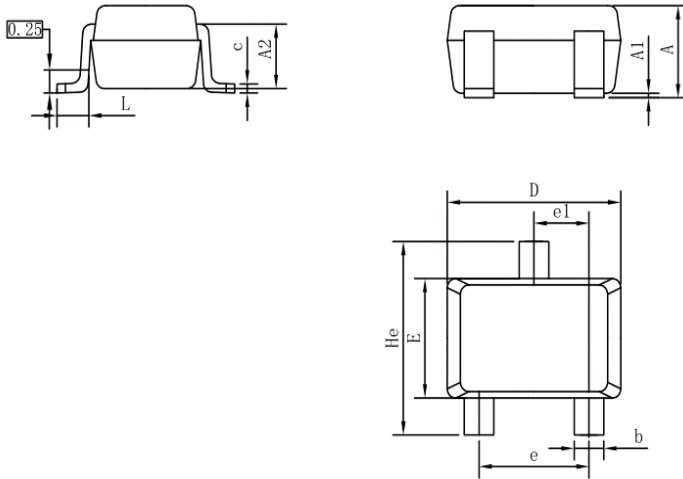
**6.ELECTRICAL CHARACTERISTICS CURVES**



**6.ELECTRICAL CHARACTERISTICS CURVES(Con.)**

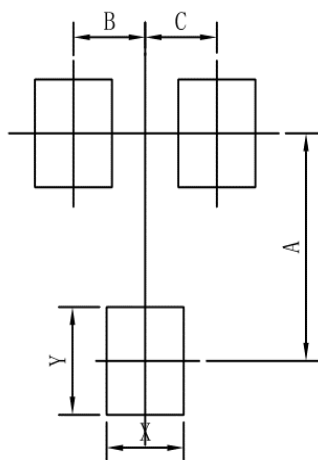


**7.OUTLINE AND DIMENSIONS**



SC70			
DIM	MIN	NOR	MAX
A	0.80	0.95	1.00
A1	0.00	0.05	0.10
A2	0.7 REF		
b	0.30	0.35	0.40
c	0.10	0.15	0.25
D	1.80	2.05	2.20
E	1.15	1.30	1.35
e	1.20	1.30	1.40
e1	0.65 BSC		
L	0.20	0.35	0.56
He	2.00	2.10	2.40
ALL Dimension in mm			

**8.SOLDERING FOOTPRINT**



SC70	
DIM	MIN
A	1.90
B	0.65
C	0.65
X	0.70
Y	0.90