NPN Silicon Epitaxial Planar Transistor

TMMDTA06-6L

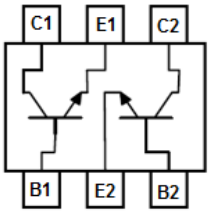
Features

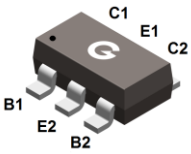
- Low collector-emitter saturation voltage
- High breakdown voltage
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

HF

Mechanical Data

- Case: SOT-23-6L
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208





SOT-23-6L

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TMMDTA06-6L	SOT-23-6L	3000 pcs / Tape & Reel	1GM

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Breakdown Voltage	V_{CEO}	80	V
Emitter-Base Breakdown Voltage	V_{EBO}	4	V
Collector Current (Continuous)	I_C	0.5	A
Collector Current (Peak)	I_{CM}	1	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T_A = 25°C) *1, 2	P_D	1.28	W
Thermal Resistance Junction-to-Air *1, 2	$R_{\theta JA}$	97	°C/W
Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Notes:

1. For a device surface mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions; the device is measured at t ≤5 seconds
2. For a dual device with one active die

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100μA, I_E = 0	80	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	80	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	4	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 80V, I_E = 0	-	-	100	nA
Collector Cut-off Current	I_{CEO}	V_{CE} = 60V, I_B = 0	-	-	100	nA
DC Current Gain	h_{FE}	V_{CE} = 1V, I_C = 10mA	100	-	-	-
		V_{CE} = 1V, I_C = 100mA	100	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 10mA	-	-	0.25	V
Base-emitter Voltage	$V_{BE(ON)}$	I_C = 100mA, V_{CE} = 1V	-	-	1.20	V
Current-Gain— Bandwidth Product	f_T	I_C = 20mA, V_{CE} = 5V f = 20MHz	100	-	-	MHz

Ratings and Characteristics Curves (@ T_A = 25°C unless otherwise specified)

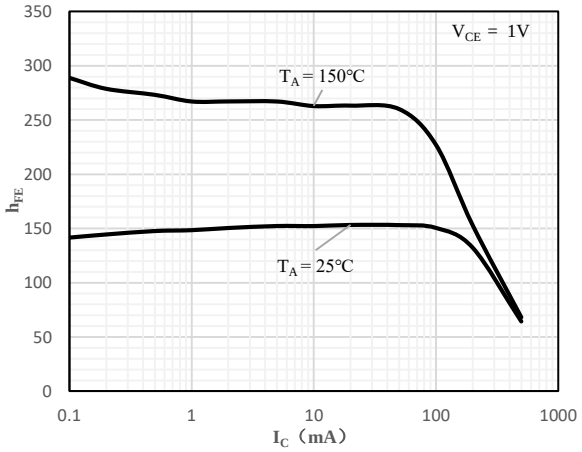


Fig 1 h_{FE} vs. I_C

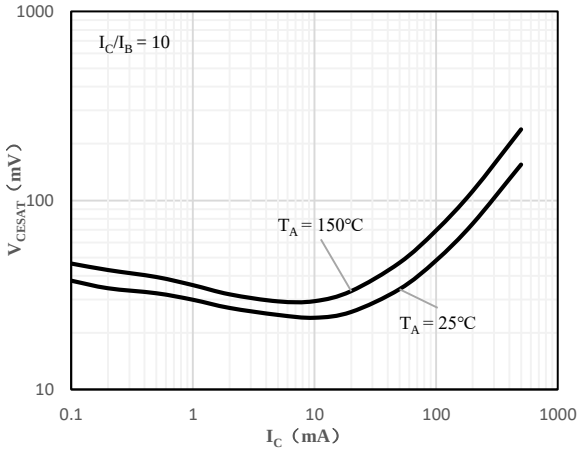


Fig 2 $V_{CE(sat)}$ vs. I_C

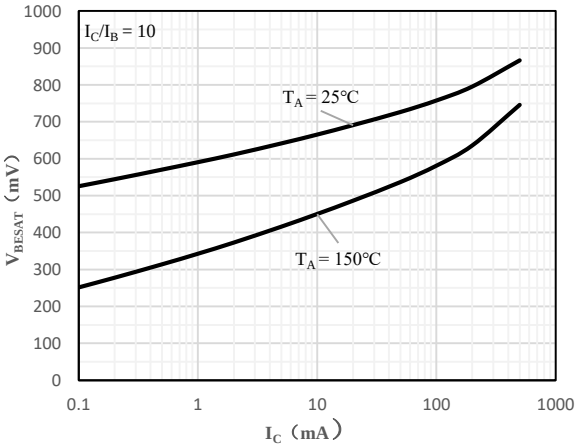


Fig 3 $V_{BE(sat)}$ vs. I_C

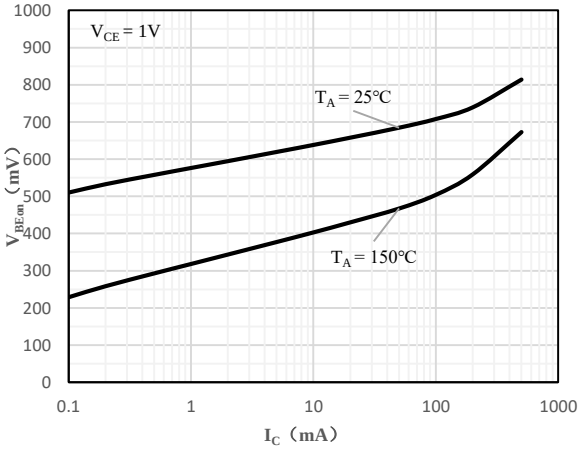
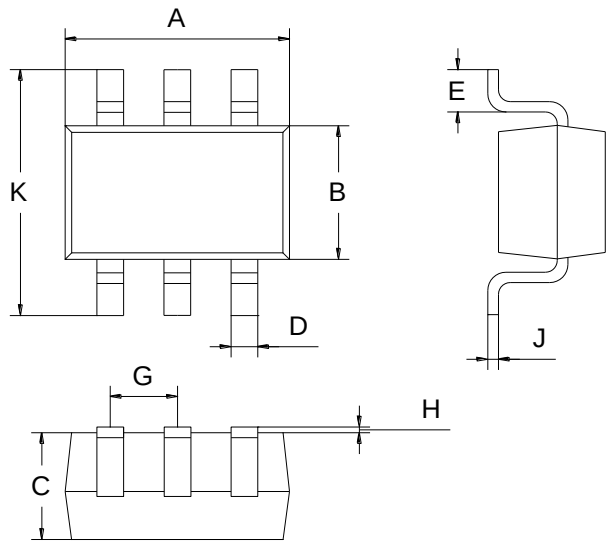


Fig 4 $V_{BE(ON)}$ vs. I_C

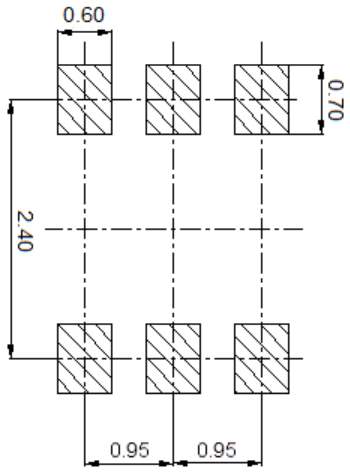
Package Outline Dimensions (Unit: mm)



SOT-23-6L		
Dimension	**Min.**	**Max.**
A	2.80	3.00
B	1.50	1.70
C	1.00	1.20
D	0.35	0.45
E	0.35	0.55
G	0.90	1.00
H	0.02	0.10
J	0.10	0.20
K	2.60	3.00

Mounting Pad Layout (Unit: mm)

SOT-23-6L



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