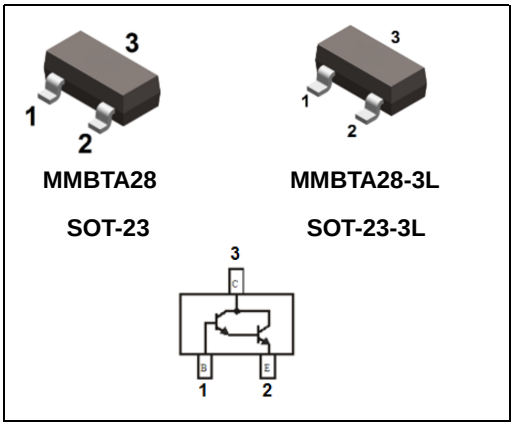
MMBTA28 MMBTA28-3L

Darlington Amplifier Transistor(NPN)

Features

- High current gain



Mechanic al Data

- Case: SOT-23, SOT-23-3L
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
MMBTA28	SOT-23	3000 pcs / Tape & Reel	3SS
MMBTA28-3L	SOT-23-3L	3000 pcs / Tape & Reel	3SS

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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	80	V
Collector-Emitter Breakdown Voltage	V_{CEO}	80	V
Emitter-Base Breakdown Voltage	V_{EBO}	12	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)	P_D	0.2	W
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	220	°C/W
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	120	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	150	°C/W
Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Note 1: The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper

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 = 10mA, I_B = 0	80	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	12	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 60V, I_E = 0	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 10V, I_C = 0	-	-	0.1	μA
Collector Emitter Cut-off Current	I_{CES}	V_{CES} = 60V	-	-	0.5	μA
DC Current Gain	h_{FE}	V_{CE} = 5V, I_C = 10mA	10K	-	-	-
		V_{CE} = 5V, I_C = 100mA	10K	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 0.01A, I_B = 0.01mA	-	-	1.2	V
		I_C = 0.1A, I_B = 0.1mA	-	-	1.5	V
Base-emitter Voltage	$V_{BE(on)}$	I_C = 0.1A, V_{CE} = 5V	-	-	2	V
Transition Frequency	f_T	V_{CE} = 5V, I_C = 10mA f = 100MHz	125	-	-	MHz
Output Capacitance	C_{ob}	V_{CB} = 1V, f = 1MHz	-	-	8	pF

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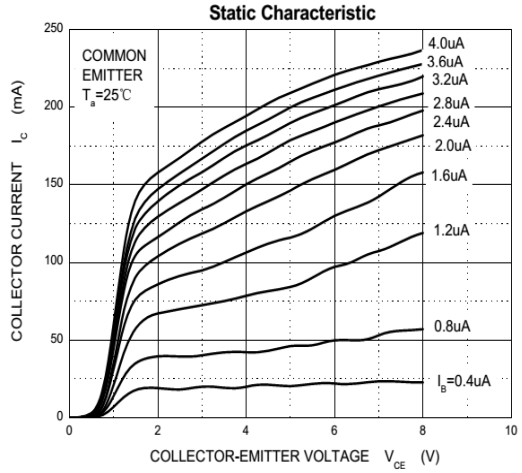
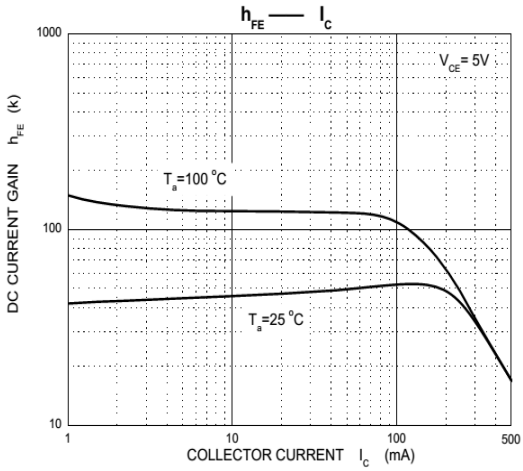
Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

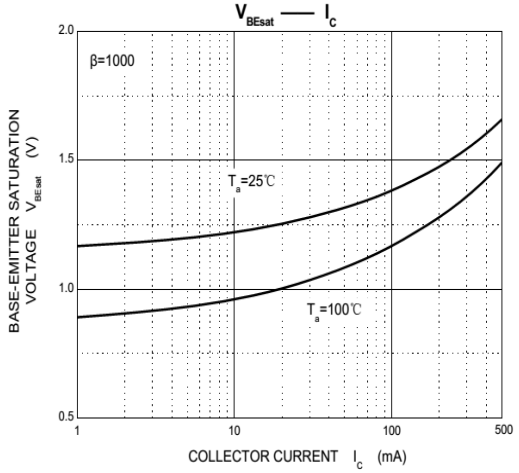
Static Characteristic



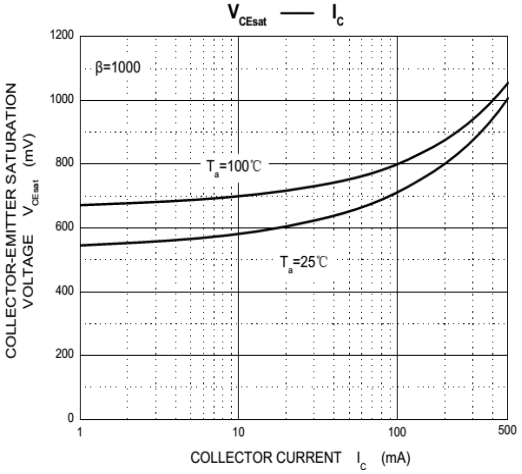
h_{FE} — I_C



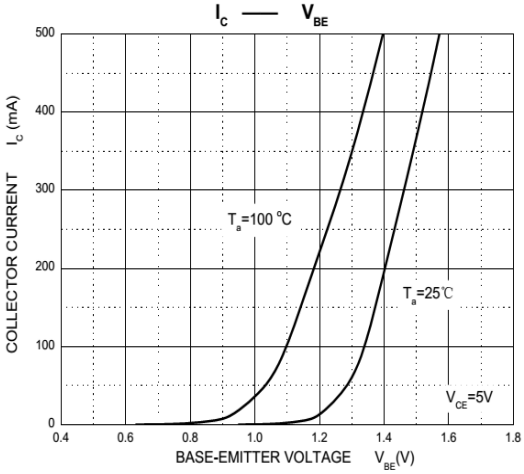
V_{BEsat} — I_C



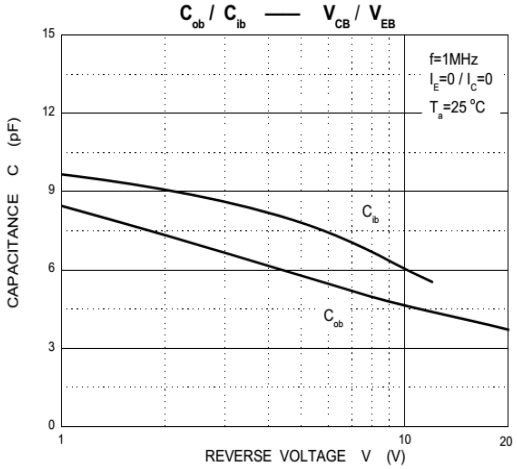
V_{CEsat} — I_C



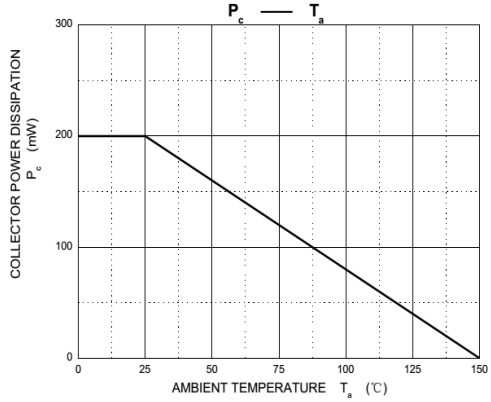
I_C — V_{BE}



C_{ob} / C_{ib} — V_{CB} / V_{EB}



P_c — T_a



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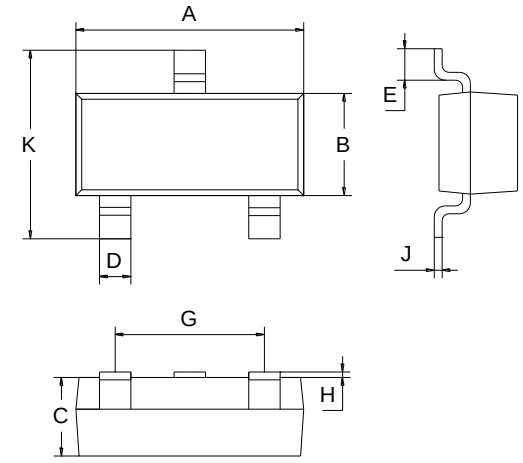
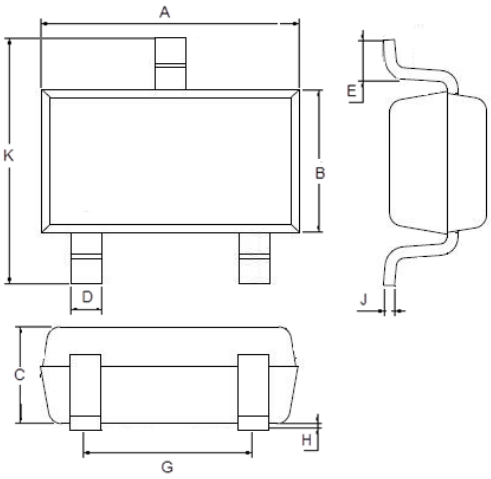
Package Outline Dimensions (Unit: mm)

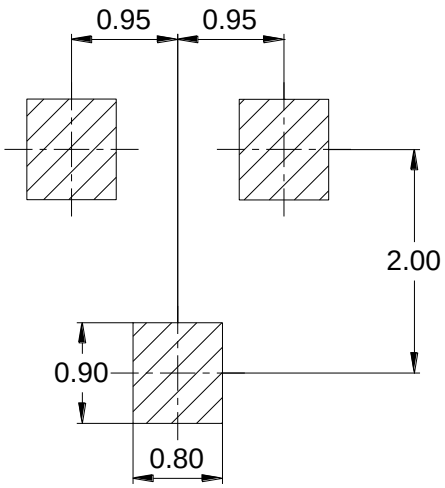


SOT-23		
Dimension	**Min.**	**Max.**
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60



SOT-23-3L		
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	1.80	2.00
H	0.02	0.10
J	0.10	0.20
K	2.60	3.00

Mounting Pad Layout (Unit: mm)



SOT-23-3L