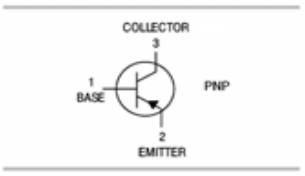
PNP Silicon Epitaxial Planar Transistor

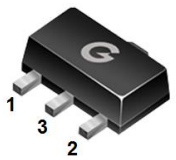
TFMMT593E

Features

HF

- High saturation voltage
- Complementary to TFMMT493E
- Excellent h_{FE} linearity
- Halogen free
- Qualified to AEC-Q101 standards for high reliability





SOT-89

Mechanic al Data

- Case: SOT-89
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TFMMT593E	SOT-89	1000 pcs / Tape & Reel	593

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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	-120	V
Collector-Emitter Breakdown Voltage	V_{CEO}	-100	V
Emitter-Base Breakdown Voltage	V_{EBO}	-5	V
Collector Current (continuous)	I_C	-1	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation(T_A = 25°C)	P_{tot}	550	mW
Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

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	-120	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = -10mA, I_B = 0	-100	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = -100μA, I_C = 0	-5	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = -100V, I_E = 0	-	-	-0.1	μA
Collector-Emitter cut-off current	I_{CES}	V_{CES} = -100V, I_C = 0	-	-	-0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = -4V, I_C = 0	-	-	-0.1	μA
DC Current Gain	h_{FE}	V_{CE} = -5V, I_C = -1mA	100	-	-	-
		V_{CE} = -5V, I_C = -250mA	100	-	-	-
		V_{CE} = -5V, I_C = -500mA	100	-	300	-
		V_{CE} = -5V, I_C = -1A	50	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -250mA, I_B = -25mA	-	-	-0.2	V
		I_C = -500mA, I_B = -50mA	-	-	-0.3	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	I_C = -500mA, I_B = -50mA	-	-	-1.1	V
Base-emitter Voltage	$V_{BE(on)}$	V_{CE} = -5V, I_C = -1A	-	-	-1.0	V
Transition Frequency	f_T	I_C = -50mA, V_{CE} = -10V f = 100MHz	50	-	-	MHz
Output Capacitance	C_{ob}	V_{CB} = -10V , I_E = 0A , f = 1MHz	-	-	5	pF

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

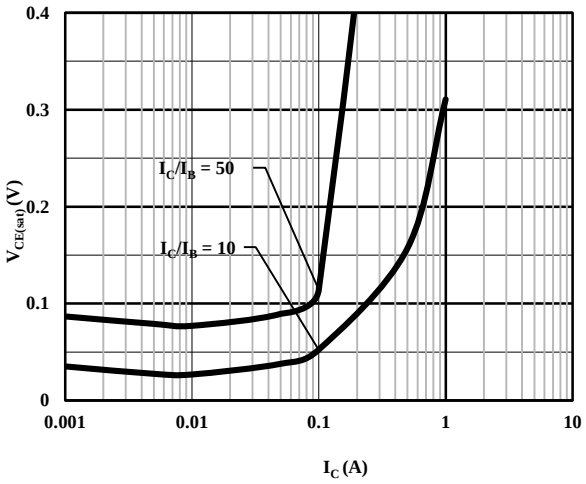


Fig. 1 Collector-Emitter Saturation Voltage vs. Collector Current

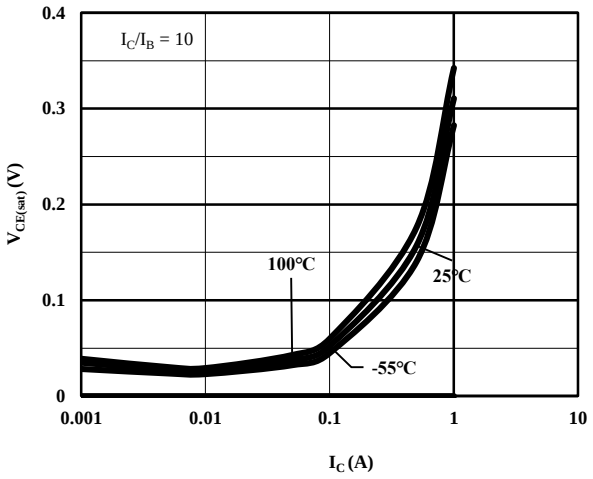


Fig. 2 Base-emitter Saturation Voltage vs. Collector Current

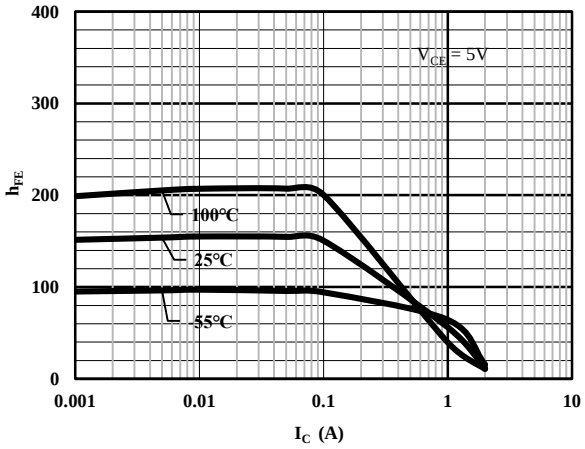


Fig. 3 DC Current Gain vs. Collector Current

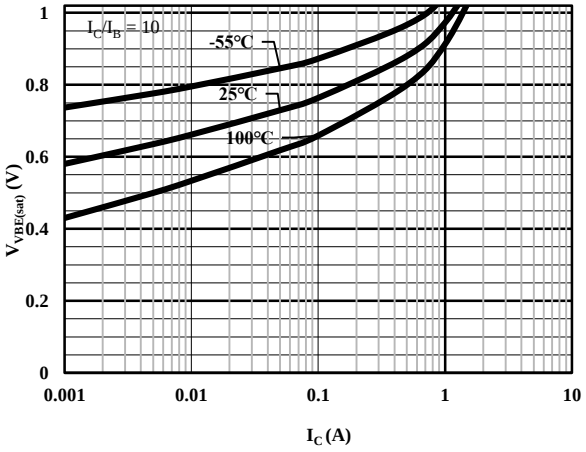


Fig. 4 Collector-Emitter Saturation Voltage vs. Collector Current

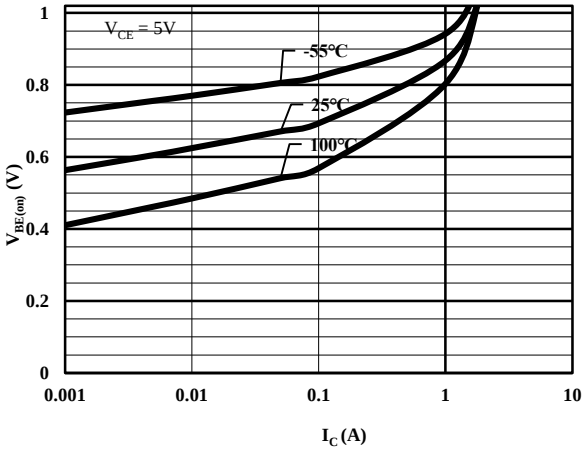


Fig. 5 Base-emitter Voltage vs. Collector Current

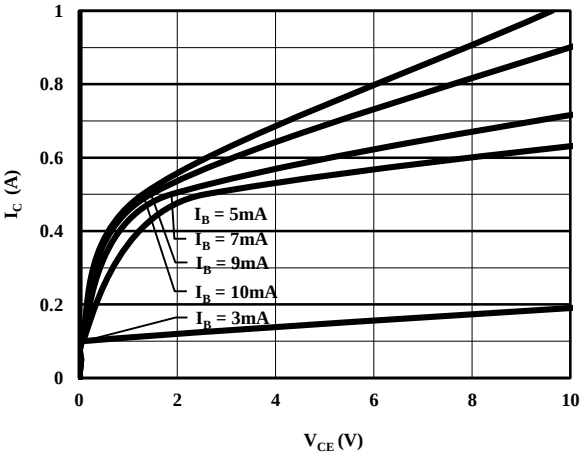
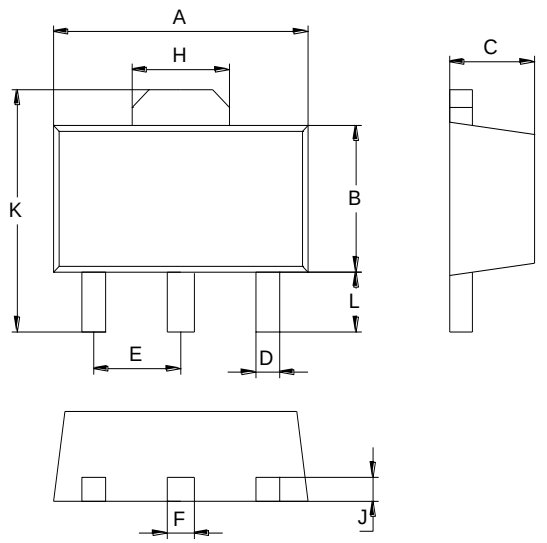


Fig 6 Output Characteristics

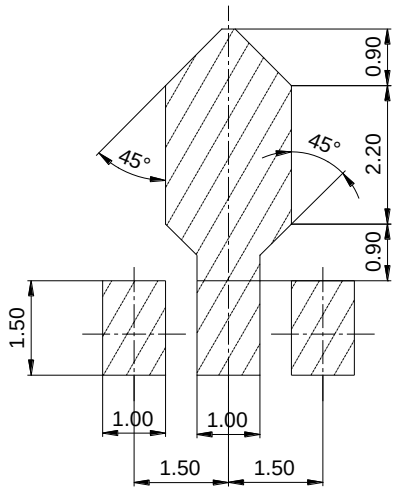
Package Outline Dimensions (Unit: mm)



SOT-89		
Dimension	**Min.**	**Max.**
A	4.30	4.70
B	2.25	2.65
C	1.30	1.70
D	0.30	0.50
E	1.40	1.60
F	0.38	0.58
H	1.60	1.80
J	0.30	0.50
L	0.90	1.10
K	3.95	4.35

Mounting Pad Layout (Unit: mm)

SOT-89



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