

NPN Transistor

150V 1A 2.8W SOT-23

FMMT495

MERITEK

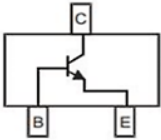
FEATURES

- High Collector-Emitter Voltage
- High Peak Pulse Current Capability
- Efficient Switching Performance with Low Saturation Voltage
- High Current Gain for Improving Amplification Performance



APPLICATIONS

- Industrial Control Systems and Power Management Circuits
- Signal Amplification in Telecommunications and Networking Equipment
- High-voltage Transistor Switches in Power Supply system

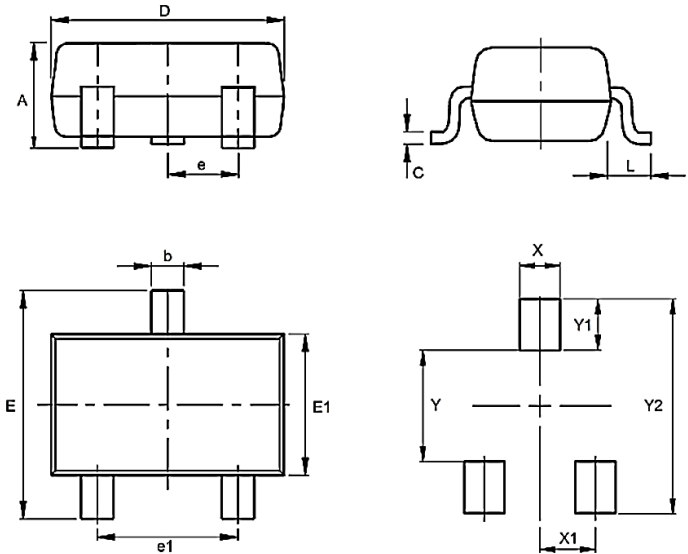


MAXIMUM RATING

Parameter		Symbol	Value	Unit
Collector-Base Voltage		V_{CBO}	170	V
Collector-Emitter Voltage		V_{CEO}	150	V
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current		I_C	1	A
Collector Peak Current		I_{CM}	2	A
Base Current		I_B	0.2	A
Total Power Dissipation	Note2	P_{tot}	0.5	W
	Note3		2.8	
Thermal Resistance from Junction to Ambient	Note2	$R_{\theta JA}$	250	°C/W
	Note3		190	
Thermal Resistance from Junction to Case		$R_{\theta JC}$	100	°C/W
Thermal Resistance from Junction to Lead		$R_{\theta JL}$	150	°C/W
Junction and Storage Temperature Range		T_J, T_{stg}	-55 ~ +150	°C

DIMENSIONS

Item	Min (mm)	Max (mm)
A1	0.00	0.10
A2	1.00	1.15
b	0.30	0.50
c	0.05	0.20
D	2.70	3.10
e	0.89	1.02
e1	1.78	2.04
E	2.10	2.64
E1	1.10	1.50
L	0.35	0.69
X	0.80	
X1	0.95	
Y	1.10	
Y1	0.90	
Y2	2.90	



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ELECTRICAL CHARACTERISTICS

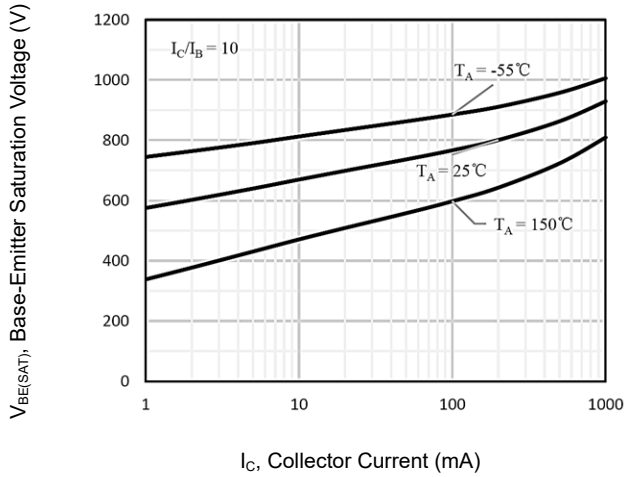
Parameter- ON Characteristic	Conditions	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain	$V_{CE}=10V, I_C=1mA$	h_{FE}	100	-	-	-
	$V_{CE}=10V, I_C=250mA$		100	-	300	
	$V_{CE}=10V, I_C=500mA$		50	-	-	
	$V_{CE}=10V, I_C=1A$		10	-	-	
Collector-Emitter Saturation Voltage	$I_C=250mA, I_B=25mA$	$V_{CE(SAT)}$	-	0.085	0.2	V
	$I_C=500mA, I_B=50mA$		-	0.150	0.3	
Base-Emitter Saturation Voltage	$I_C=500mA, I_B=50mA$	$V_{BE(SAT)}$	-	-	1.0	V
Base-Emitter Voltage	$I_C=500mA, V_{CE}=10V$	V_{BE}	-	-	1.0	V
Parameter- OFF Characteristics	Conditions	Symbol	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$I_C=1mA, I_E=0$	$V_{(BR)CBO}$	170	-	-	V
Collector-Emitter Breakdown Voltage	$I_C=10mA, I_B=0$	$V_{(BR)CEO}$	150	-	-	V
Emitter-Base Breakdown Voltage	$I_E=1mA, I_C=0$	$V_{(BR)EBO}$	7	-	-	V
Collector-Base Cut-Off Current	$V_{CB}=160V, I_E=0$	I_{CBO}	-	-	0.1	μA
Collector-Emitter Cut-Off Current	$V_{CE}=150V$	I_{CES}	-	-	0.1	μA
Emitter-Base Cut-Off Current	$V_{EB}=4V, I_C=0$	I_{EBO}	-	-	0.1	μA
Parameter-DynamicSignal	Conditions	Symbol	Min.	Typ.	Max.	Unit
Current-Gain – Bandwidth Product	$V_{CE}=10V, I_C=50mA, f=100MHz$	f_T	100	-	-	MHz
Output Capacitance	$V_{CB}=10V, I_E=0, f=1MHz$	C_{ob}	-	-	10	pF

Note:

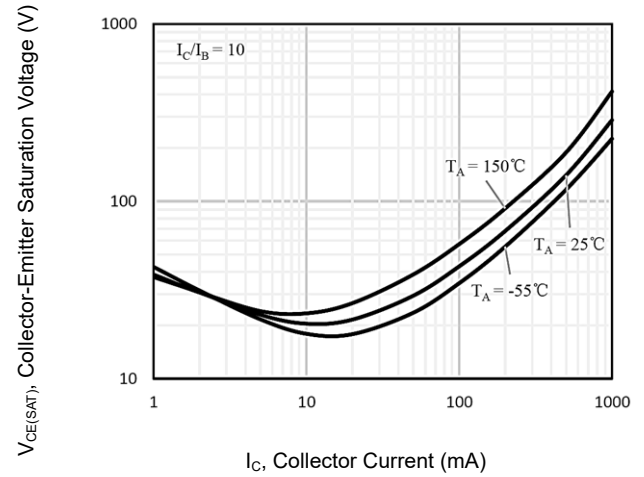
- $T_A = 25^\circ C$ unless otherwise specified
- For a device surface mounted on 15mm x 15mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions; the device is measured when operating in a steady-state condition
- The data tested by surface mounted on 1 inch² FR-4 board with 20Z copper

CHARACTERISTIC CURVES

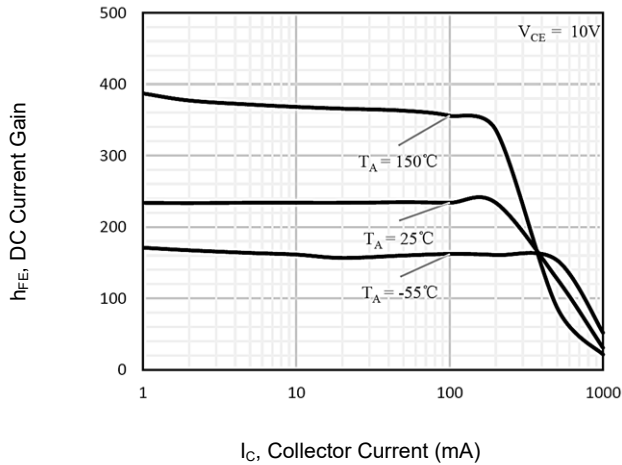
Base-Emitter Saturation Voltage



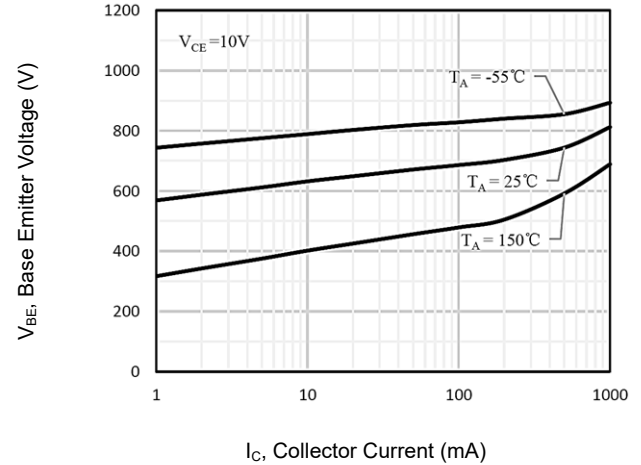
Collector-Emitter Saturation Voltage



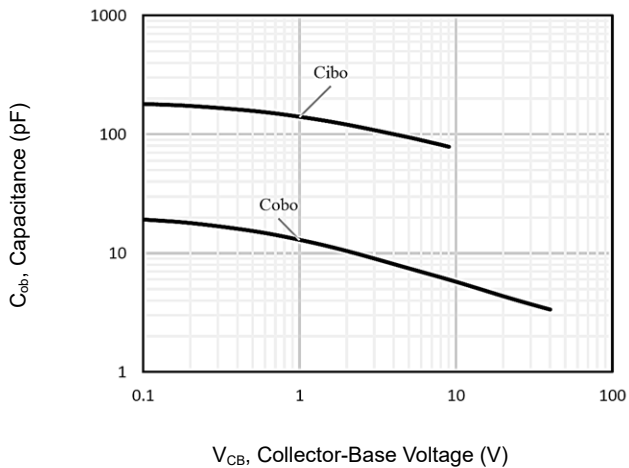
Current Gain



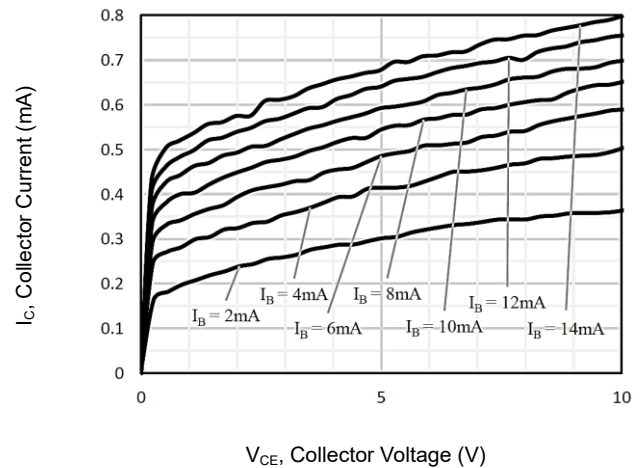
Base-Emitter On Voltage



Output Capacitance



Safe Operating Area



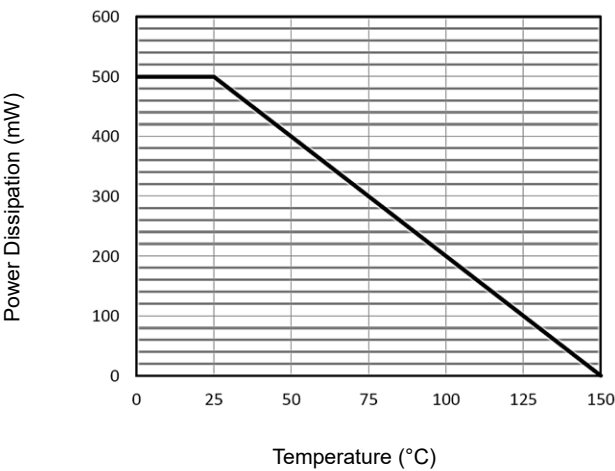
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CHARACTERISTIC CURVES

Steady State Power Derating



*Specifications subject to change without notice.