

SOT-23 BIPOLAR TRANSISTORS
TRANSISTOR(NPN)

FEATURES

- * Power dissipation
 $P_{CM} : \square \quad 0.5 \square \quad W$ ($T_{amb}=25^{\circ}C$)
- * Collector current
 $I_{CM} : \square \quad 1 \square \quad A$
- * Collector-base voltage
 $V_{(BR)CBO} : \square \quad 80 \square \quad V$
- * Operating and storage junction temperature range
 $T_J, T_{stg} : -55^{\circ}C$ to $+150^{\circ}C$

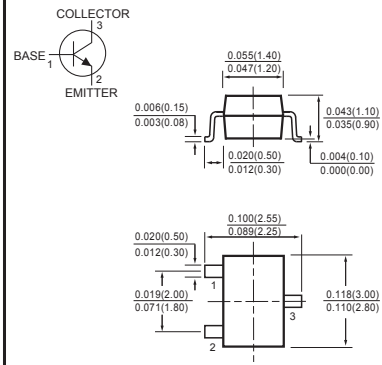
MECHANICAL DATA

- * Case: Molded plastic
- * Epoxy: UL 94V-O rate flame retardant
- * Lead: MIL-STD-202E method 208C guaranteed
- * Mounting position: Any
- * Weight: 0.008 gram
- * Marking: 491

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at $25^{\circ}C$ ambient temperature unless otherwise specified.
Single phase , half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

SOT-23



ELECTRICAL CHARACTERISTICS (@ $T_A = 25^{\circ}C$ unless otherwise noted)

CHARACTERISTICS	SYMBOL	MIN	TYP	MAX	UNITS
Collector-base breakdown voltage ($I_C = 100\mu A, I_E = 0$)	$V_{(BR)CBO}$	80	-	-	V
Collector-emitter breakdown voltage ($I_C = 10mA, I_B = 0$) (Note 1)	$V_{(BR)CEO}$	60	-	-	V
Emitter-base breakdown voltage ($I_E = 100\mu A, I_C = 0$)	$V_{(BR)EBO}$	5	-	-	V
Collector cut-off current ($V_{CB} = 60V, I_E = 0$)	I_{CBO}	-	-	0.1	mA
Emitter cut-off current ($V_{EB} = 4V, I_C = 0$)	I_{EBO}	-	-	0.1	mA
DC current gain ($V_{CE} = 5V, I_C = 1mA$)	$h_{FE(1)}$	100	-	-	-
DC current gain ($V_{CE} = 5V, I_C = 500mA$) (Note 1)	$h_{FE(2)}$	100	-	300	-
DC current gain ($V_{CE} = 5V, I_C = 1A$) (Note 1)	$h_{FE(3)}$	80	-	-	-
DC current gain ($V_{CE} = 5V, I_C = 2A$) (Note 1)	$h_{FE(4)}$	30	-	-	-
Collector-emitter saturation voltage ($I_C = 500mA, I_B = 50mA$) (Note 1)	$V_{CE(sat)1}$	-	-	0.25	V
Collector-emitter saturation voltage ($I_C = 1A, I_B = 100mA$) (Note 1)	$V_{CE(sat)2}$	-	-	0.5	V
Base-emitter saturation voltage ($I_C = 1A, I_B = 100mA$) (Note 1)	$V_{BE(sat)}$	-	-	1.1	V
Base-emitter voltage ($V_{CE} = 5V, I_C = 1A$) (Note 1)	V_{BE}	-	-	1	V
Transition frequency ($V_{CE} = 10V, I_C = 50mA, f=100MHz$)	f_T	150	-	-	MHZ
Collector output capacitance ($V_{CB} = 10V, f=1MHz$)	C_{ob}	-	-	10	pF

Notes 1: Measured under pulsed conditions, Pulse width=300ms, Duty cycle.< 2%.

2: "Fully ROHS compliant", "100% Sn plating (Pb-free)".

RATING AND CHARACTERISTICS CURVES (FMMT491)

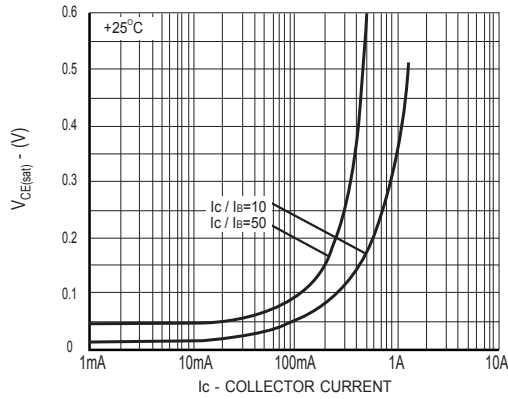


Figure1 $V_{CE(sat)}$ vs I_C

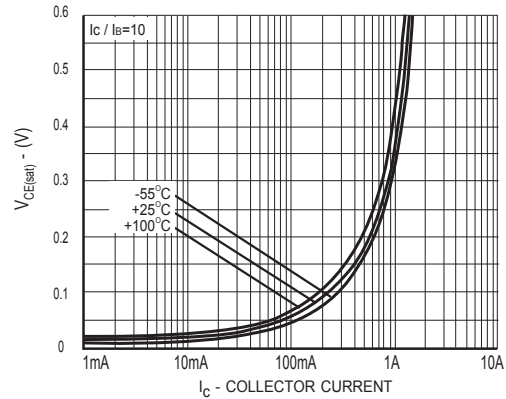


Figure2 $V_{CE(sat)}$ vs I_C

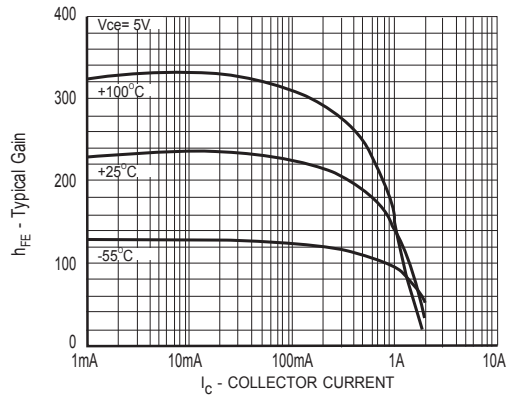


Figure3 h_{FE} vs I_C

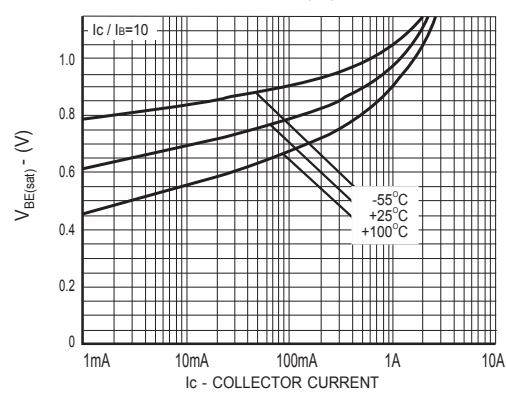


Figure4 $V_{BE(sat)}$ vs I_C

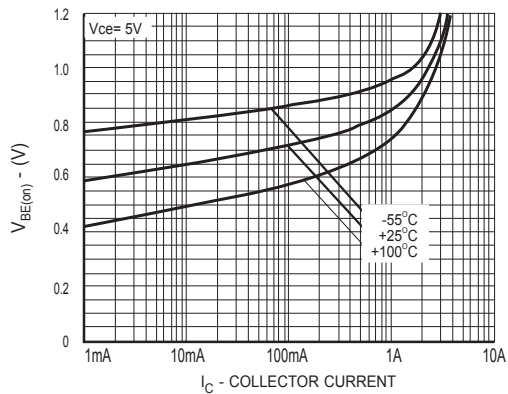


Figure5 $V_{BE(on)}$ vs I_C

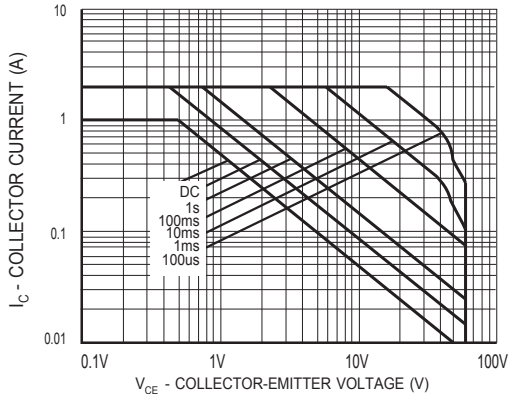


Figure6 Safe Operating Area

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