

# SOT23 NPN SILICON PLANAR HIGH VOLTAGE TRANSISTOR

## FMMT458

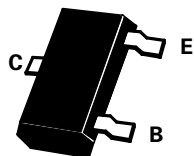
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### FEATURES

\* 400 Volt  $V_{CEO}$

COMPLEMENTARY TYPE – FMMT558

PARTMARKING DETAIL – 458



SOT23

### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	400	V
Collector-Emitter Voltage	$V_{CEO}$	400	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Continuous Collector Current	$I_C$	225	mA
Peak Pulse Current	$I_{CM}$	1	A
Base Current	$I_B$	200	mA
Power Dissipation at $T_{amb}=25^\circ\text{C}$	$P_{tot}$	500	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^\circ\text{C}$

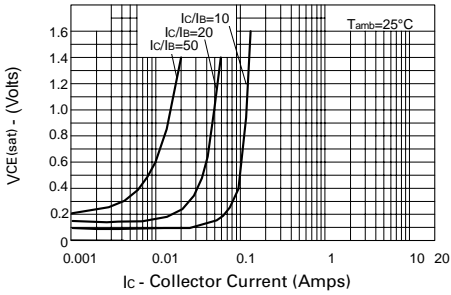
### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ ).

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	400		V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{CEO(sus)}$	400		V	$I_C=10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		V	$I_E=100\mu\text{A}$
Collector Cut-Off Current	$I_{CBO}$		100	nA	$V_{CB}=320\text{V}$
Collector Cut-Off Current	$I_{CES}$		100	nA	$V_{CE}=320\text{V}$
Emitter Cut-Off Current	$I_{EBO}$		100	nA	$V_{EB}=4\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.2 0.5	V	$I_C=20\text{mA}, I_B=2\text{mA}^*$ $I_C=50\text{mA}, I_B=6\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.9	V	$I_C=50\text{mA}, I_B=5\text{mA}^*$
Base-Emitter Turn On Voltage	$V_{BE(on)}$		0.9	V	$I_C=50\text{mA}, V_{CE}=10\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	100 100 15	300		$I_C=1\text{mA}, V_{CE}=10\text{V}$ $I_C=50\text{mA}, V_{CE}=10\text{V}^*$ $I_C=100\text{mA}, V_{CE}=10\text{V}^*$
Transition Frequency	$f_T$	50		MHz	$I_C=10\text{mA}, V_{CE}=20\text{V}$ $f=20\text{MHz}$
Output Capacitance	$C_{obo}$		5	pF	$V_{CB}=20\text{V}, f=1\text{MHz}$
Switching times	$t_{on}$ $t_{off}$		135 Typical 2260 Typical	ns ns	$I_C=50\text{mA}, V_{CC}=100\text{V}$ $I_{B1}=5\text{mA}, I_{B2}=-10\text{mA}$

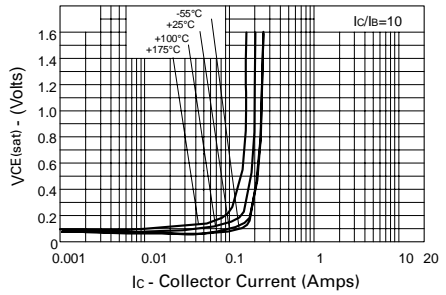
\*Measured under pulsed conditions.

Spice parameter data is available upon request for this device

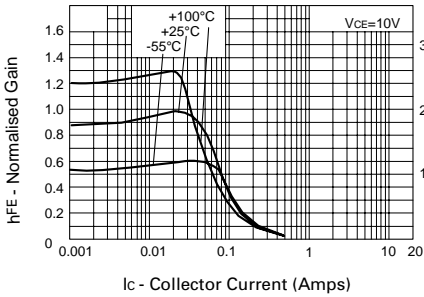
## TYPICAL CHARACTERISTICS



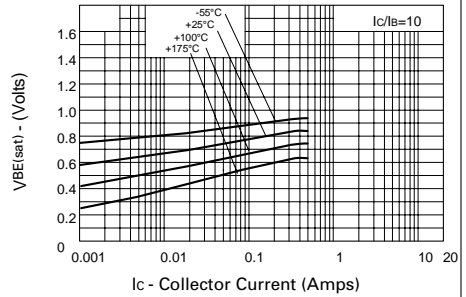
**$V_{CE(sat)}$  v  $I_C$**



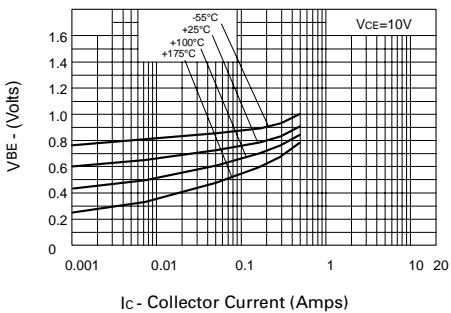
**$V_{CE(sat)}$  v  $I_C$**



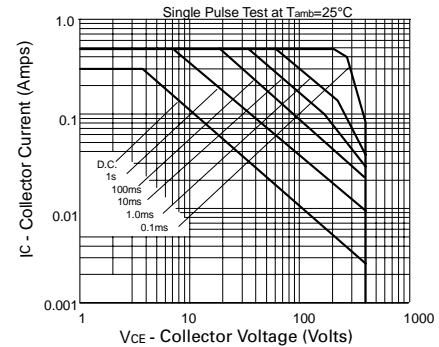
**$h_{FE}$  v  $I_C$**



**$V_{BE(sat)}$  v  $I_C$**



**$V_{BE(on)}$  v  $I_C$**



**Safe Operating Area**