

# SOT23 NPN SILICON PLANAR HIGH VOLTAGE TRANSISTOR

## FMMT458

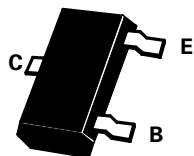
ISSUE 4 – APRIL 2002

### 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 $T_{amb}=25^{\circ}C$	$P_{tot}$	500	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

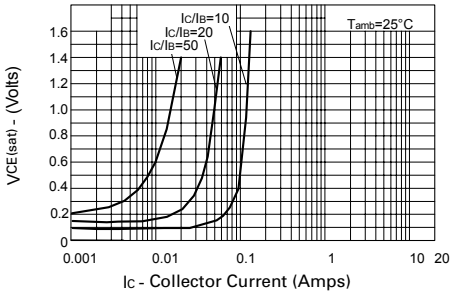
### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ ).

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

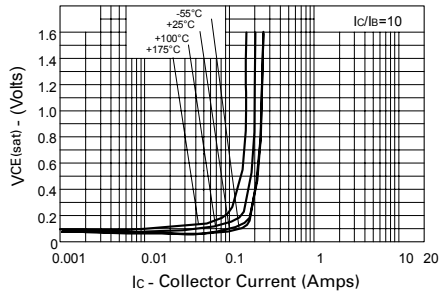
\*Measured under pulsed conditions.

Spice parameter data is available upon request for this device

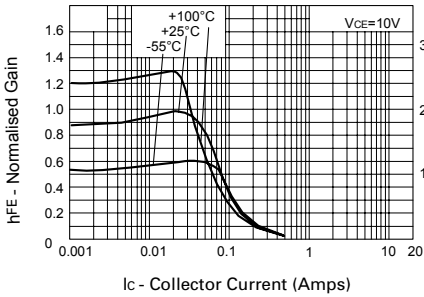
## TYPICAL CHARACTERISTICS



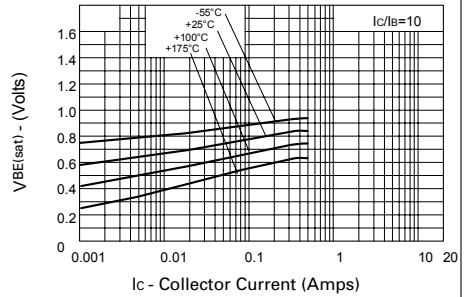
**$V_{CE(sat)}$  v  $I_C$**



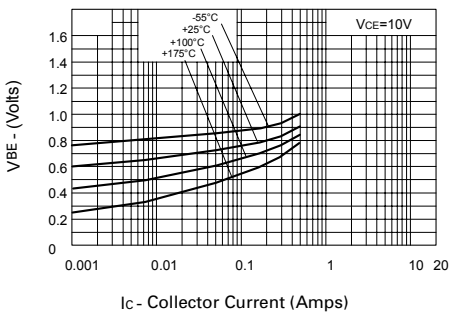
**$V_{CE(sat)}$  v  $I_C$**



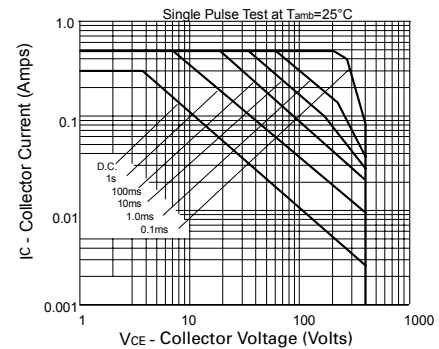
**$h_{FE}$  v  $I_C$**



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



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



**Safe Operating Area**