

SOT23 NPN SILICON PLANAR MEDIUM POWER DARLINGTON TRANSISTORS

ISSUE 3 – AUGUST 1996

FEATURES

- * 60 Volt V_{CEO}
- * Gain of 10K at $I_C=0.5$ Amp

PARTMARKING DETAILS – FMMT38A – 4J
FMMT38B – 5J
FMMT38C – 7J

ABSOLUTE MAXIMUM RATINGS.

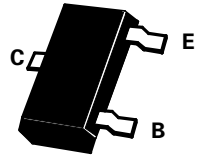
PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	10	V
Peak Pulse Current	I_{CM}	800	mA
Continuous Collector Current	I_C	300	mA
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	330	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

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

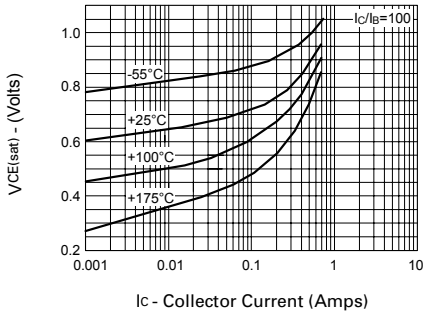
PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80		V	$I_C=10\mu A, I_E=0$
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	60		V	$I_C=10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	10		V	$I_E=10\mu A, I_C=0$
Collector Cut-Off Current	I_{CBO}		100	nA	$V_{CB}=60V, I_E=0$
Emitter Cut-Off Current	I_{EBO}		100	nA	$V_{EB}=8V, I_C=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		1.25	V	$I_C=800mA, I_B=8mA^*$
Base-Emitter Turn-on Voltage	$V_{BE(on)}$		1.8	V	$I_C=800mA, V_{CE}=5V^*$
Static Forward Current Transfer Ratio	FMMT38A h_{FE}	500 1000			$I_C=100mA, V_{CE}=5V^*$ $I_C=500mA, V_{CE}=5V^*$
	FMMT38B	2000 4000			$I_C=100mA, V_{CE}=5V^*$ $I_C=500mA, V_{CE}=5V^*$
	FMMT38C	5000 10000			$I_C=100mA, V_{CE}=5V^*$ $I_C=500mA, V_{CE}=5V^*$

*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$
Spice parameter data is available upon request for this device

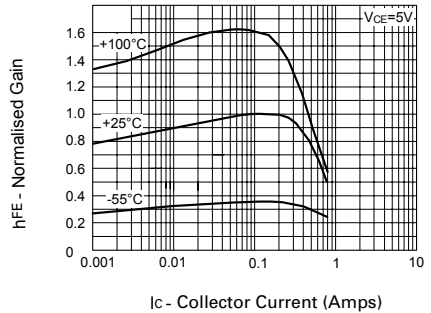
FMMT38A
FMMT38B
FMMT38C



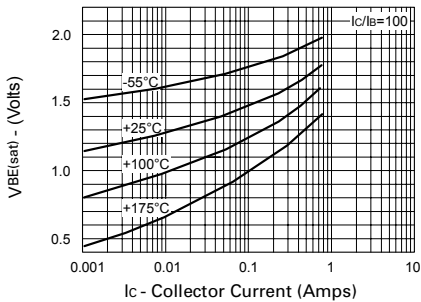
TYPICAL CHARACTERISTICS



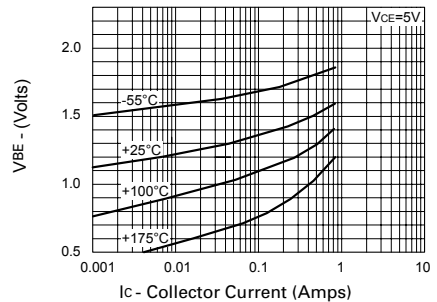
$V_{CE(sat)}$ v I_C



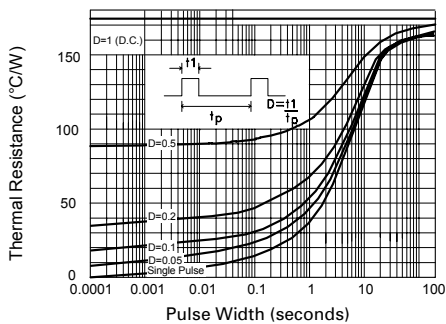
h_{FE} v I_C



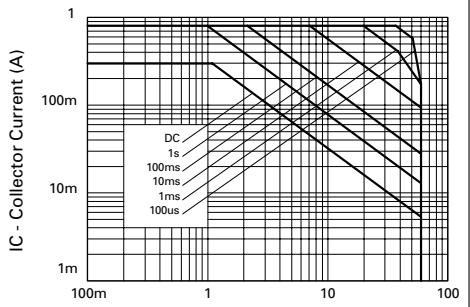
$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C



Maximum transient thermal impedance



VCE - Collector Emitter Voltage (V)

Safe Operating Area