

# SOT23 NPN SILICON PLANAR HIGH GAIN MEDIUM POWER TRANSISTOR

## FMMTL619

ISSUE 1 – NOVEMBER 1997

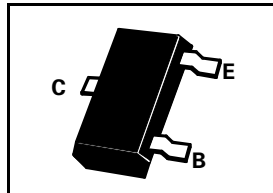
### FEATURES

Very low equivalent on-resistance;  $R_{CE(sat)}=160m\Omega$  at 1.25A

COMPLEMENTARY TYPE – FMMTL720

PARTMARKING DETAIL – L69

### ABSOLUTE MAXIMUM RATINGS.



PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	100	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Continuous Collector Current	$I_C$	1.25	A
Peak Pulse Current	$I_{CM}$	2	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	$^{\circ}C$

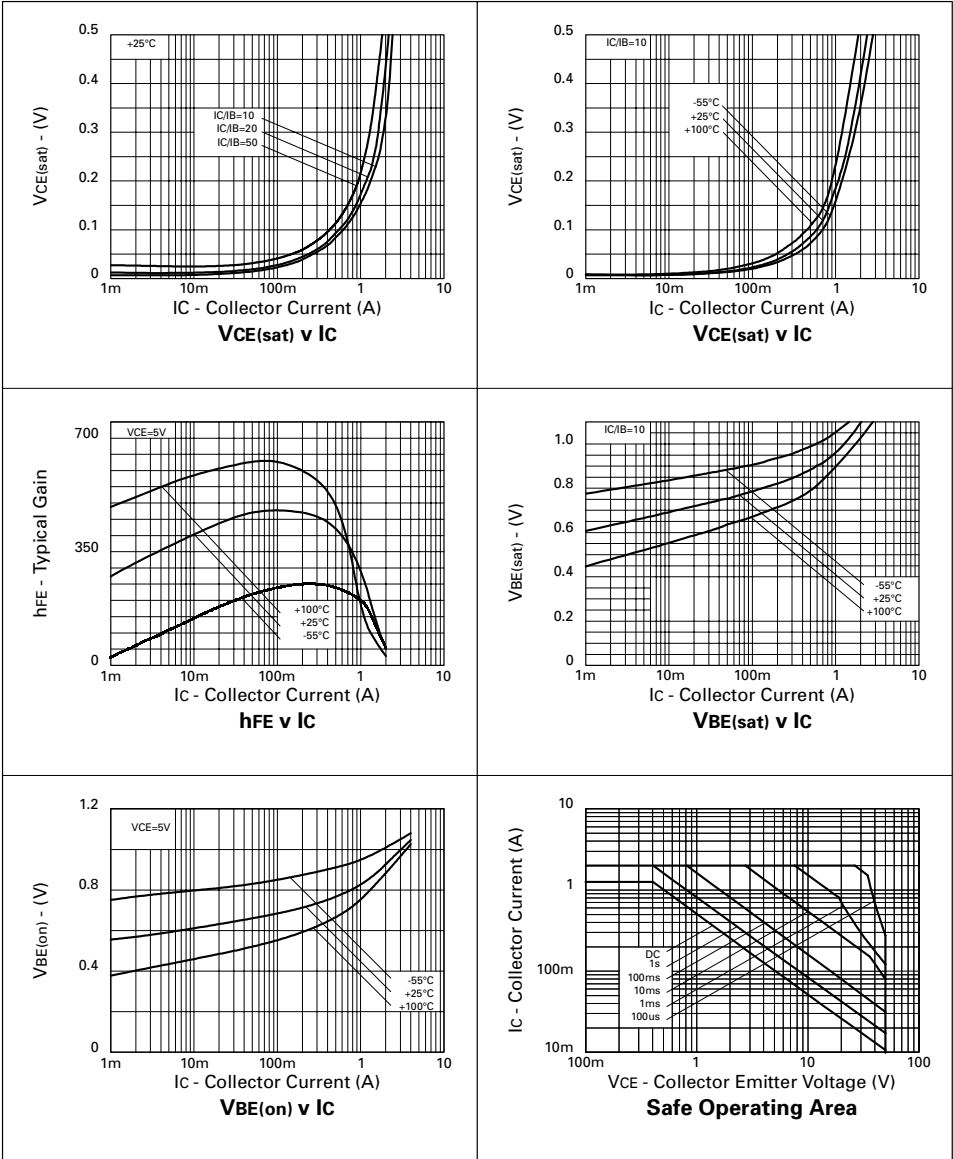
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## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ ).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	100	210		V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50	70		V	$I_C=5\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	8.5		V	$I_E=100\mu\text{A}$
Collector Cut-Off Current	$I_{CBO}$			10	nA	$V_{CB}=40\text{V}$
Emitter Cut-Off Current	$I_{EBO}$			10	nA	$V_{EB}=4\text{V}$
Collector Cut-Off Current	$I_{CES}$			10	nA	$V_{CE}=40\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		24 60 100 195	45 100 180 330	mV	$I_C=100\text{mA}, I_B=10\text{mA}^*$ $I_C=250\text{mA}, I_B=10\text{mA}^*$ $I_C=500\text{mA}, I_B=25\text{mA}^*$ $I_C=1.25\text{A}, I_B=125\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1020	1100	mV	$I_C=1.25\text{A}, I_B=125\text{mA}^*$
Base-Emitter Turn On Voltage	$V_{BE(on)}$		895	1000	mV	$I_C=1.25\text{A}, V_{CE}=2\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	200 300 200 100 30	400 450 400 230 50			$I_C=10\text{mA}, V_{CE}=5\text{V}$ $I_C=200\text{mA}, V_{CE}=5\text{V}^*$ $I_C=500\text{mA}, V_{CE}=5\text{V}^*$ $I_C=1\text{A}, V_{CE}=5\text{V}^*$ $I_C=2\text{A}, V_{CE}=5\text{V}^*$
Transition Frequency	$f_T$		180		MHz	$I_C=50\text{mA}, V_{CE}=10\text{V}$ $f=100\text{MHz}$
Collector-Base Breakdown Voltage	$C_{obo}$		6	8	pF	$V_{CB}=10\text{V}, f=1\text{MHz}$
Switching times	$t_{on}$ $t_{off}$		182 379		ns ns	$I_C=1\text{A}, V_{CC}=10\text{V}$ $I_{B1}=-I_{B2}=10\text{mA}$

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$

## TYPICAL CHARACTERISTICS





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