

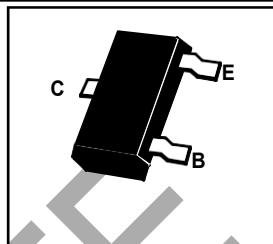
# SOT23 NPN SILICON PLANAR DARLINGTON TRANSISTORS

**FMMTA12**  
**FMMTA13**  
**FMMTA14**

ISSUE 4 - DECEMBER 1996

COMPLEMENTARY TYPES - FMMTA12 - NONE  
FMMTA13 - FMMTA63  
FMMTA14 - FMMTA64

PARTMARKING DETAILS - FMMTA12 - 3W  
FMMTA13 - 1M  
FMMTA14 - 1N



## ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	FMMTA12	FMMTA13/14	UNIT
Collector-Base Voltage	$V_{CBO}$		40	V
Collector-Emitter Voltage	$V_{CEO}$		40	V
Collector-Emitter Voltage	$V_{CES}$	20	40	V
Emitter-Base Voltage	$V_{EBO}$		10	V
Continuous Collector Current	$I_C$		300	mA
Power Dissipation at $T_{am} = 25\text{ C}$	$P_{tot}$		330	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$		-55 to +150	C

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

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	20 40		V V	$I_C = 100\mu\text{A}, I_B = 0^*$ $I_C = 100\mu\text{A}, I_B = 0^*$
Collector Cut-Off Current	$I_{CES}$		100	nA	$V_{CB} = 15\text{V}, V_{BE} = 0$
Collector Cut-Off Current	$I_{CBO}$		100 100	nA nA	$V_{CB} = 15\text{V}, I_E = 0$ $V_{CB} = 30\text{V}, I_E = 0$
Emitter Cut-Off Current	$I_{EBO}$		100	nA	$V_{EB} = 10\text{V}, I_C = 0$
Static Forward Current Transfer Ratio	$h_{FE}$	20K 5K 10K 10K 20K			$I_C = 10\text{mA}, V_{CE} = 5\text{V}^*$ $I_C = 10\text{mA}, V_{CE} = 5\text{V}^*$ $I_C = 100\text{mA}, V_{CE} = 5\text{V}^*$ $I_C = 10\text{mA}, V_{CE} = 5\text{V}^*$ $I_C = 100\text{mA}, V_{CE} = 5\text{V}^*$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		1.0 0.9	V V	$I_C = 10\text{mA}, I_B = 0.01\text{mA}$ $I_C = 100\text{mA}, I_B = 0.1\text{mA}$
Base-Emitter On Voltage	$V_{BE(on)}$		1.4 2.0	V V	$I_C = 10\text{mA}, V_{CE} = 5\text{V}^*$ $I_C = 100\text{mA}, V_{CE} = 5\text{V}^*$

\*Measured under pulsed conditions. Pulse width = 300 $\mu\text{s}$ . Duty cycle  $\leq$  2%. Spice parameter data is available upon request for these devices  
For typical graphs see FMMT38A datasheet