

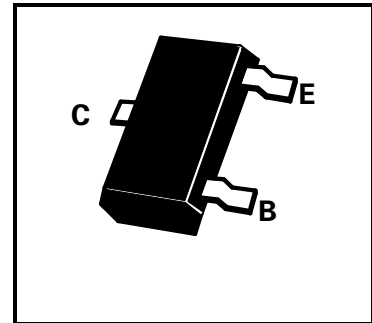
# SOT23 NPN SILICON PLANAR DARLINGTON TRANSISTORS

**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 $T_{amb}=25^{\circ}C$	$P_{tot}$		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-Emitter Breakdown Voltage	$V_{(BR)CES}$	20 40		V V	$I_C=100\mu A, I_B=0^*$ $I_C=100\mu A, I_B=0^*$
Collector Cut-Off Current	$I_{CES}$		100	nA	$V_{CB}=15V, V_{BE}=0$
Collector Cut-Off Current	$I_{CBO}$		100 100	nA nA	$V_{CB}=15V, I_E=0$ $V_{CB}=30V, I_E=0$
Emitter Cut-Off Current	$I_{EBO}$		100	nA	$V_{EB}=10V, I_C=0$
Static Forward Current Transfer Ratio	$h_{FE}$	20K 5K 10K 10K 20K			$I_C=10mA, V_{CE}=5V^*$ $I_C=10mA, V_{CE}=5V^*$ $I_C=100mA, V_{CE}=5V^*$ $I_C=10mA, V_{CE}=5V^*$ $I_C=100mA, V_{CE}=5V^*$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		1.0 0.9	V V	$I_C=10mA, I_B=0.01mA$ $I_C=100mA, I_B=0.1mA$
Base-Emitter On Voltage	$V_{BE(on)}$		1.4 2.0	V V	$I_C=10mA, V_{CE}=5V^*$ $I_C=100mA, V_{CE}=5V^*$

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