

# SOT89 NPN SILICON PLANAR HIGH VOLTAGE TRANSISTOR

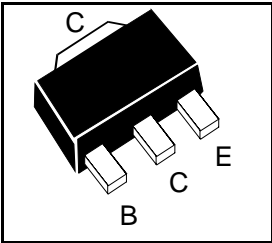
## FCX458

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### FEATURES

- \* 400 Volt  $V_{CE0}$
- \*  $P_{tot} = 1$  Watt

COMPLEMENTARY TYPE – FCX558  
PARTMARKING DETAIL – N58



### 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	$I_{CM}$	500	mA
Power Dissipation at $T_{amb}=25^\circ\text{C}$	$P_{tot}$	1	W
Operating and Storage Temperature Range	$T_j, T_{stg}$	-65 to +150	$^\circ\text{C}$

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

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

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$   
Spice parameter data is available upon request for this device  
For typical characteristics graphs see FMMT458 datasheet