

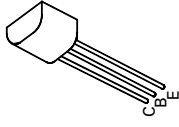
NPN SILICON PLANAR MEDIUM POWER DARLINGTON TRANSISTORS

ISSUE 1 – MARCH 94

FEATURES

- * 60 Volt V_{CE0}
- * Gain of 10K at $I_C=0.5$ Amp
- * $P_{tot}=1$ Watt

BCX38A/B/C



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

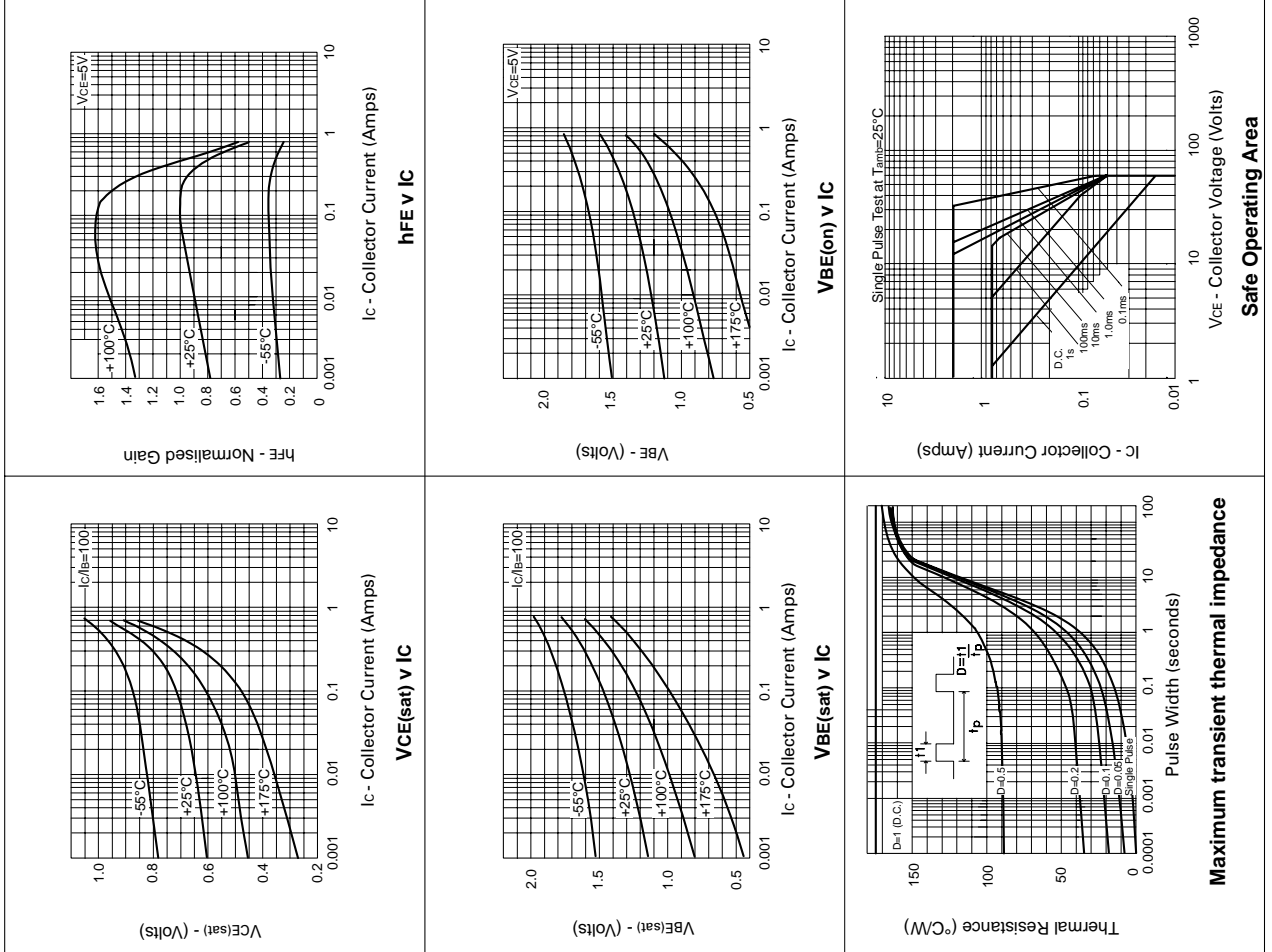
PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	10	V
Peak Pulse Current	I_{CM}	2	A
Continuous Collector Current	I_C	800	mA
Power Dissipation at $T_{amb}=25^\circ\text{C}$	P_{tot}	1	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200	$^\circ\text{C}$

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

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



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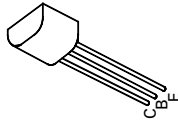
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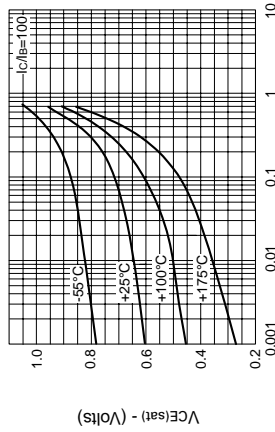
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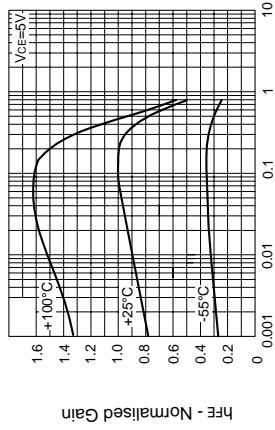
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TYPICAL CHARACTERISTICS



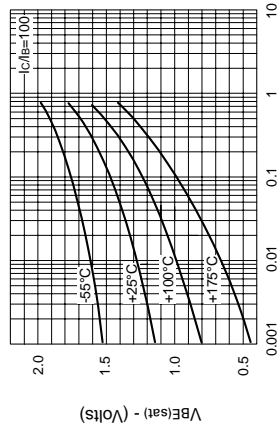
I_C - Collector Current (Amps)

$V_{CE(sat)}$ v I_C



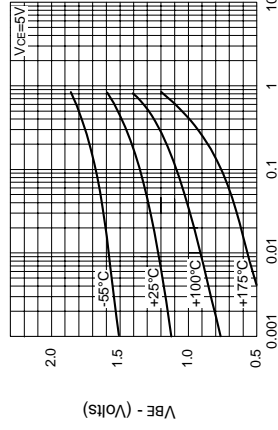
I_C - Collector Current (Amps)

hFE v I_C



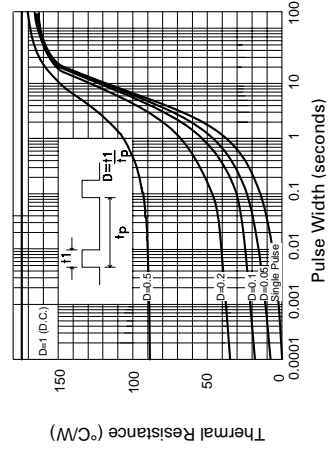
I_C - Collector Current (Amps)

$V_{BE(sat)}$ v I_C

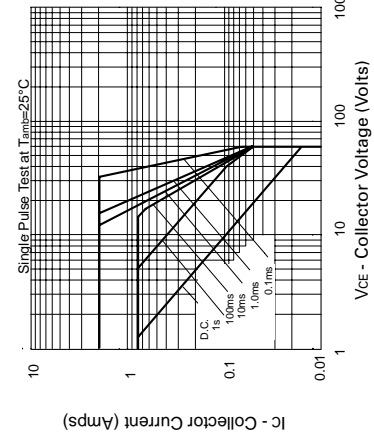


I_C - Collector Current (Amps)

$V_{BE(on)}$ v I_C



Maximum transient thermal impedance



I_C - Collector Current (Amps)

V_{CE} - Collector Voltage (Volts)

Safe Operating Area

ABSOLUTE MAXIMUM RATINGS.

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Current Transfer Ratio		2000				$I_C=100\text{mA}, V_{CE}=5\text{V}^*$
		4000				$I_C=500\text{mA}, V_{CE}=5\text{V}^*$
BCX38C		5000				$I_C=100\text{mA}, V_{CE}=5\text{V}^*$
		10000				$I_C=500\text{mA}, V_{CE}=5\text{V}^*$

BCX38A/B/C

