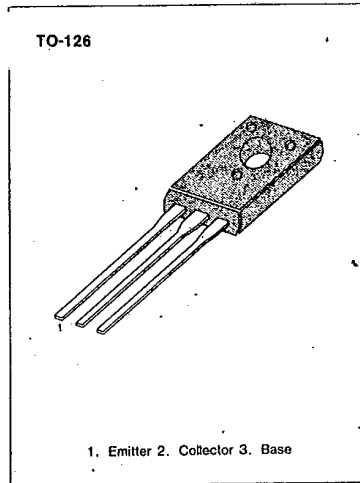


**MJE700/701/702/703** **NPN EPITAXIAL SILICON DARLINGTON TRANSISTOR**

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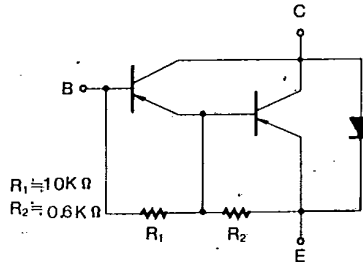
**HIGH DC CURRENT GAIN**  
**MIN  $h_{FE} = 750$  @  $I_C = -1.5$  and  $-2.0A$  DC**  
**MONOLITHIC CONSTRUCTION WITH**  
**BUILT-IN BASE-EMITTER RESISTORS**

• Complementary to MJE800/801/802/803



**ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ C$ )**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-60	V
:MJE700/701		-80	V
:MJE702/703			
Collector-Emitter Voltage	$V_{CEO}$	-60	V
:MJE700/701		-80	V
:MJE702/703			
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-4	A
Base Current	$I_B$	-0.1	A
Collector Dissipation	$P_C$	40	W
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55~150	$^\circ C$



3

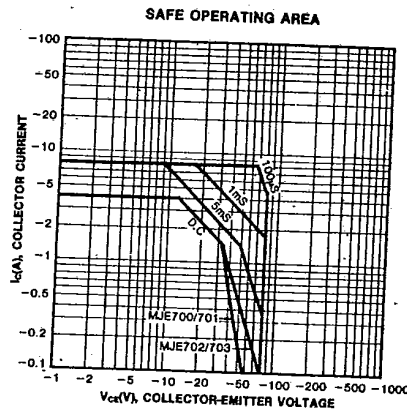
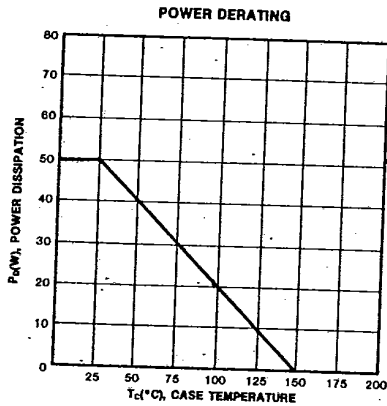
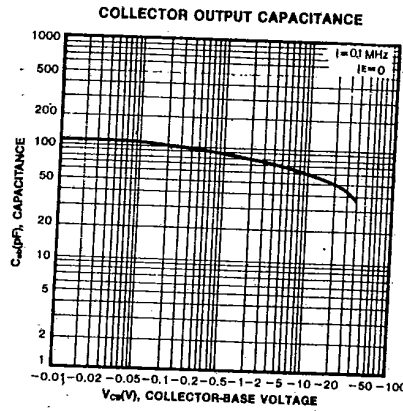
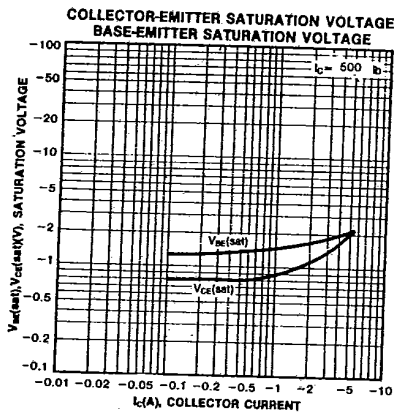
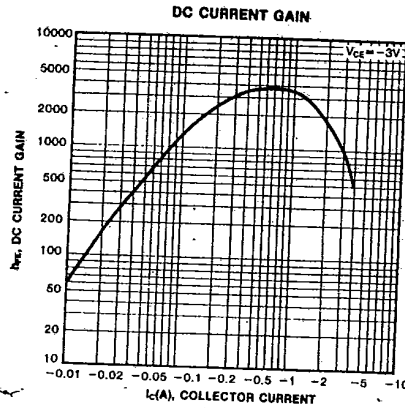
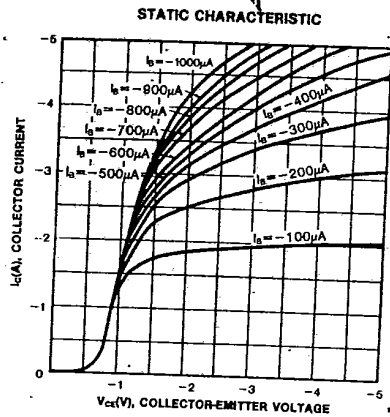
**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )**

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = -50mA, I_B = 0$	-60		V
:MJE700/701			-80		V
:MJE702/703					
Collector Cutoff Current	$I_{CEO}$	$V_{CE} = -60V, I_B = 0$		-100	$\mu A$
:MJE700/701		$V_{CE} = -80V, I_B = 0$		-100	$\mu A$
:MJE702/703					
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = \text{Rated } BV_{CEO}, I_E = 0$		-500	$\mu A$
:MJE700/701		$T_C = 100^\circ C$			
:MJE702/703					
Emitter Cutoff Current	$I_{EBO}$	$V_{BE} = -5V, I_C = 0$		-2	mA
DC Current Gain	$h_{FE}$	$V_{CE} = -3V, I_C = -1.5A$	750		
:MJE701/703		$V_{CE} = -3V, I_C = -2A$	750		
:ALL DEVICES		$V_{CE} = -3V, I_C = -4A$	100		
Collector-Emitter Saturation Voltage:	$V_{CE(sat)}$	$I_C = -1.5A, I_B = -30mA$		-2.5	V
:MJE700/702		$I_C = -2A, I_B = -40mA$		-2.8	V
:MJE701/703		$I_C = -4A, I_B = -40mA$		-3	V
:ALL DEVICES					
Base-Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = -3V, I_C = -1.5A$		-2.5	V
:MJE700/702		$V_{CE} = -3V, I_C = -2A$		-2.5	V
:MJE701/703		$V_{CE} = -3V, I_C = -4A$		-3	V
:ALL DEVICES					

MJE700/701/702/703

NPN EPITAXIAL SILICON DARLINGTON TRANSISTOR

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**MJE800/801/802/803**

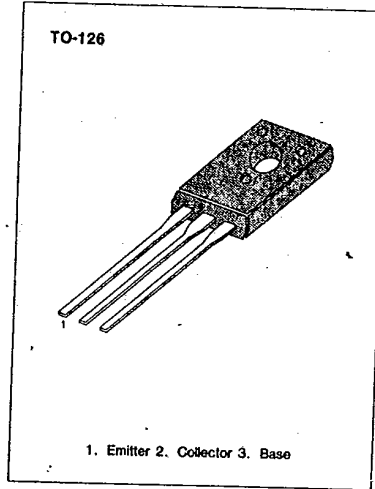
**NPN EPITAXIAL SILICON DARLINGTON TRANSISTOR**

**HIGH DC CURRENT GAIN**  
**MIN  $h_{FE} = 750$  @  $I_C = -1.5$  and  $-2.0A$  DC**  
**MONOLITHIC CONSTRUCTION WITH BUILT-IN BASE-EMITTER RESISTORS**

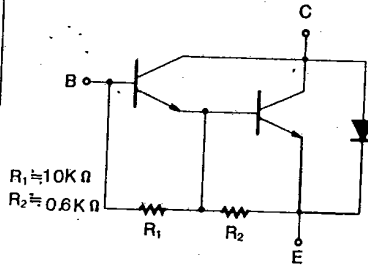
• Complementary to MJE700/701/702/703

**ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ C$ )**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	60	V
:MJE800/801		80	V
:MJE802/803			
Collector-Emitter Voltage	$V_{CEO}$	60	V
:MJE800/801		80	V
:MJE802/803			
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	4	A
Base Current	$I_B$	0.1	A
Collector Dissipation	$P_C$	40	W
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55~150	$^\circ C$



3



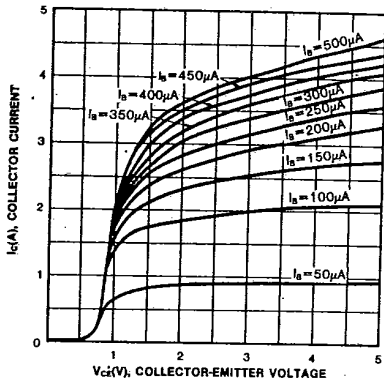
**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )**

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = 50mA, I_B = 0$	60		V
:MJE800/801			80		V
:MJE802/803					
Collector Cutoff Current	$I_{CEO}$	$V_{CE} = 60V, I_B = 0$		100	$\mu A$
:MJE800/801		$V_{CB} = 80V, I_B = 0$		100	$\mu A$
:MJE802/803		$V_{CB} = \text{Rated } BV_{CEO}, I_E = 0$		100	$\mu A$
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = \text{Rated } BV_{CEO}, I_E = 0$		500	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$T_C = 100^\circ C$			
DC Current Gain	$h_{FE}$	$V_{BE} = 5V, I_C = 0$		2	mA
:MJE800/802		$V_{CE} = 3V, I_C = 1.5A$	750		
:MJE801/803		$V_{CE} = 3V, I_C = 2A$	750		
:ALL DEVICES		$V_{CE} = 3V, I_C = 4A$	100		
Collector-Emitter Saturation Voltage:	$V_{CE(sat)}$				
:MJE800/802		$I_C = 1.5A, I_B = 30mA$		2.5	V
:MJE801/803		$I_C = 2A, I_B = 40mA$		2.8	V
:ALL DEVICES		$I_C = 4A, I_B = 40mA$		3	V
Base-Emitter On Voltage	$V_{BE(on)}$				
:MJE800/802		$V_{CE} = 3V, I_C = 1.5A$		2.5	V
:MJE801/803		$V_{CE} = 3V, I_C = 2A$		2.5	V
:ALL DEVICES		$V_{CE} = 3V, I_C = 4A$		3	V

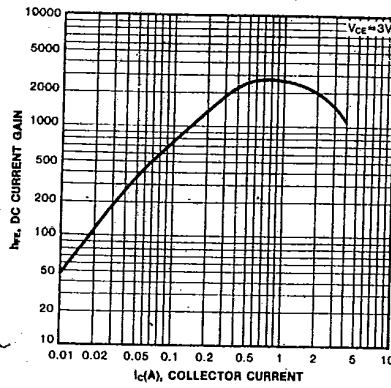
**NPN EPITAXIAL SILICON DARLINGTON TRANSISTOR**

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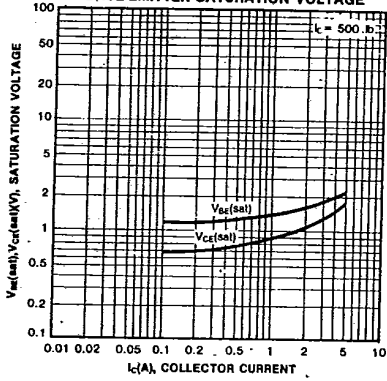
STATIC CHARACTERISTIC



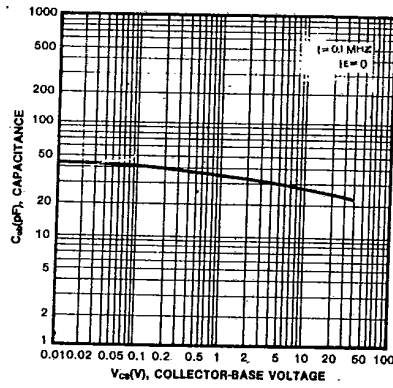
DC CURRENT GAIN



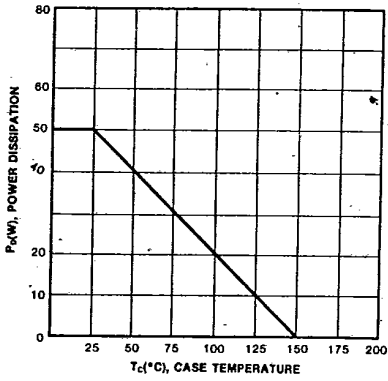
COLLECTOR-EMITTER SATURATION VOLTAGE  
BASE-EMITTER SATURATION VOLTAGE



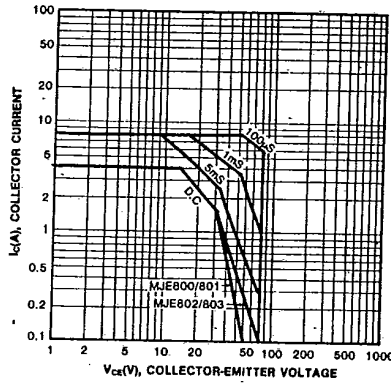
COLLECTOR OUTPUT CAPACITANCE



POWER DERATING



SAFE OPERATING AREA



**MJE2955T****PNP SILICON TRANSISTOR**

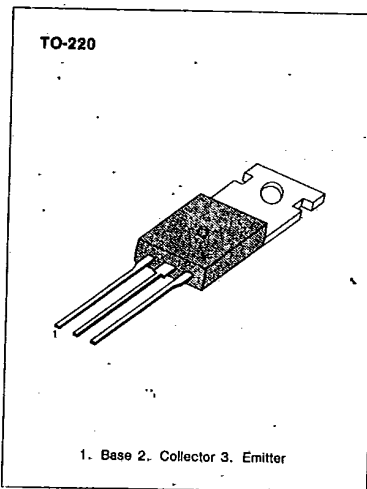
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**GENERAL PURPOSE AND SWITCHING APPLICATIONS**  
**DC CURRENT GAIN SPECIFIED TO 10 AMPERES**

- High Current Gain-Bandwidth Product ( $f_T = 2\text{MHz (MIN)}$ )

**ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	-70	V
Collector-Emitter Voltage	$V_{CE0}$	-60	V
Emitter-Base Voltage	$V_{EB0}$	-5	V
Collector Current	$I_C$	-10	A
Base Current	$I_B$	-6	A
Collector Dissipation ( $T_C = 25^\circ\text{C}$ )	$P_C$	75	W
Collector Dissipation ( $T_a = 25^\circ\text{C}$ )	$P_C$	0.6	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$



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**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )**

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Emitter Sustaining Voltage	$V_{CE0(sus)}$	$I_C = -200\text{mA}, I_B = 0$	-60		V
Collector Cutoff Current	$I_{CE0}$	$V_{CE} = -30\text{V}, I_B = 0$		-700	$\mu\text{A}$
Collector Cutoff Current	$I_{CEX}$	$V_{CE} = -70\text{V}, V_{BE(off)} = 1.5\text{V}$		-1	mA
		$V_{CE} = -70\text{V}, V_{BE(off)} = 1.5\text{V}$		-5	mA
		$T_C = 150^\circ\text{C}$			
Emitter Cutoff Current	$I_{EB0}$	$V_{EB} = -5\text{V}, I_C = 0$		-5	mA
DC Current Gain	$h_{FE}$	$V_{CE} = -4\text{V}, I_C = -4\text{A}$	20	100	
		$V_{CE} = -4\text{V}, I_C = -10\text{A}$	5		
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -4\text{A}, I_B = -0.4\text{A}$		-1.1	V
		$I_C = -10\text{A}, I_B = -3.3\text{A}$		-8	V
Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = -4\text{V}, I_C = -4\text{A}$		-1.8	V
Current Gain Bandwidth Product	$f_T$	$V_{CE} = -10\text{V}, I_C = -500\text{mA}$ $f = 500\text{KHz}$	2		MHz

\* Pulse test:  $PW \leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$  Pulse



MJE2955T

PNP SILICON TRANSISTOR

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