



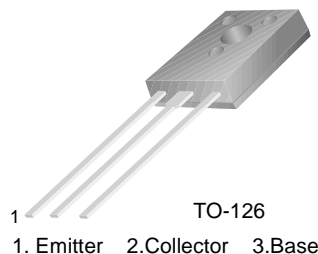
**THE DATASHEET OF  
MJE701STU**



## MJE700/701/702/703

### Monolithic Construction With Built-in Base-Emitter Resistors

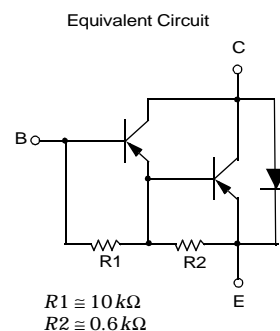
- High DC Current Gain :  $h_{FE} = 750$  (Min.) @  $I_C = -1.5$  and  $-2.0$ A DC
- Complement to MJE800/801/802/803



### PNP Epitaxial Silicon Darlington Transistor

#### Absolute Maximum Ratings $T_C = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector- Base Voltage : MJE700/701	- 60	V
	: MJE702/703	- 80	V
$V_{CEO}$	Collector-Emitter Voltage : MJE700/701	- 60	V
	: MJE702/703	- 80	V
$V_{EBO}$	Emitter- Base Voltage	- 5	V
$I_C$	Collector Current	- 4	A
$I_B$	Base Current	- 0.1	A
$P_C$	Collector Dissipation ( $T_C = 25^\circ\text{C}$ )	40	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$



#### Electrical Characteristics $T_C = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -10\text{ mA}, I_B = 0$	-60		V
	: MJE700/701 : MJE702/703		-80		V
$I_{CEO}$	Collector Cut-off Current	$V_{CE} = -60\text{ V}, I_B = 0$ $V_{CE} = -80\text{ V}, I_B = 0$		-100	$\mu\text{A}$
	: MJE700/701 : MJE702/703			-100	$\mu\text{A}$
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = \text{Rated } BV_{CEO}, I_E = 0$ $V_{CB} = \text{Rated } BV_{CEO}, I_E = 0$ $T_C = 100^\circ\text{C}$		-100	$\mu\text{A}$
				-500	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{BE} = -5\text{ V}, I_C = 0$		-2	mA
$h_{FE}$	DC Current Gain	$V_{CE} = -3\text{ V}, I_C = -1.5\text{ A}$ $V_{CE} = -3\text{ V}, I_C = -2\text{ A}$ $V_{CE} = -3\text{ V}, I_C = -4\text{ A}$	750		
			750		
			100		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -1.5\text{ A}, I_B = -30\text{ mA}$ $I_C = -2\text{ A}, I_B = -40\text{ mA}$ $I_C = -4\text{ A}, I_B = -40\text{ mA}$		-2.5	V
				-2.8	V
				-3	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = -3\text{ V}, I_C = -1.5\text{ A}$ $V_{CE} = -3\text{ V}, I_C = -2\text{ A}$ $V_{CE} = -3\text{ V}, I_C = -4\text{ A}$		-1.2	V
				-2.5	V
				-3	V

# Typical Characteristics

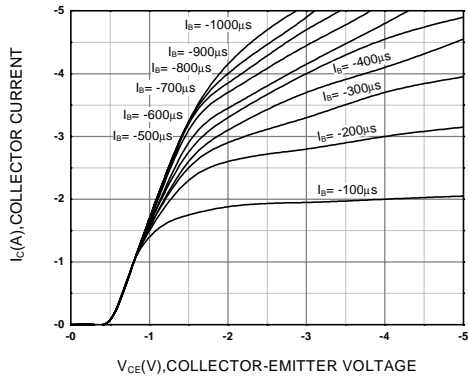


Figure 1. Static Characteristic

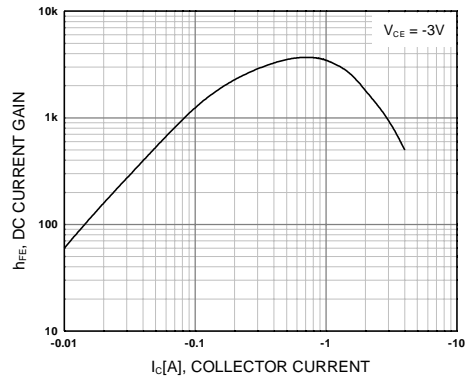


Figure 2. DC current Gain

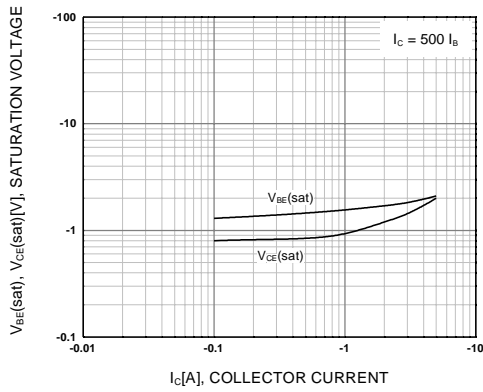


Figure 3. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

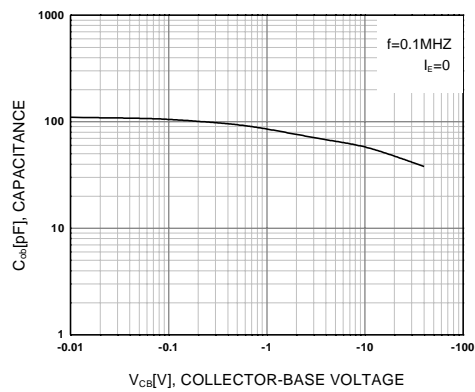


Figure 4. Collector Output Capacitance

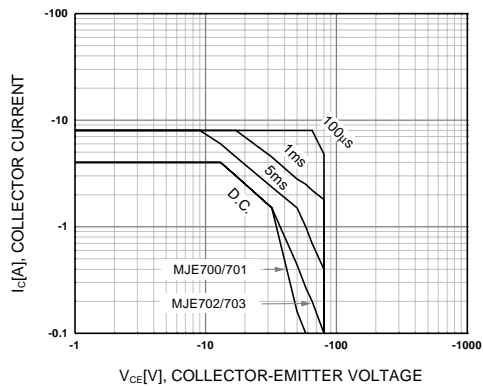


Figure 5. Safe Operating Area

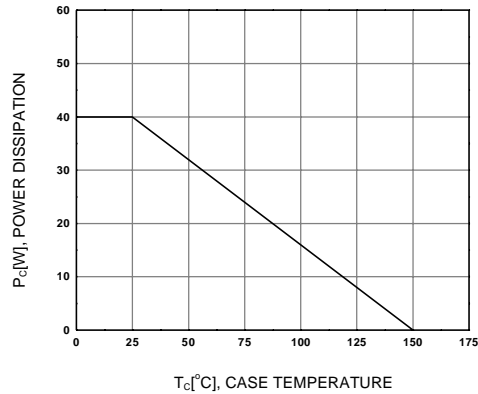
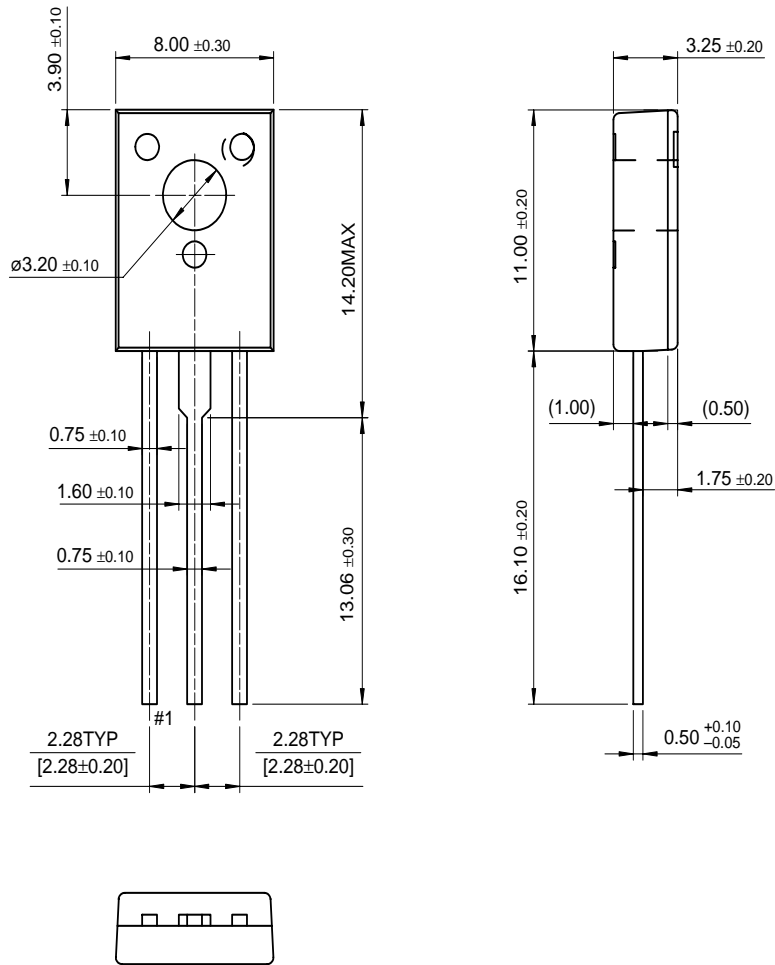


Figure 6. Power Derating

# Package Dimensions

## TO-126



Dimensions in Millimeters

MJE700/701/702/703

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