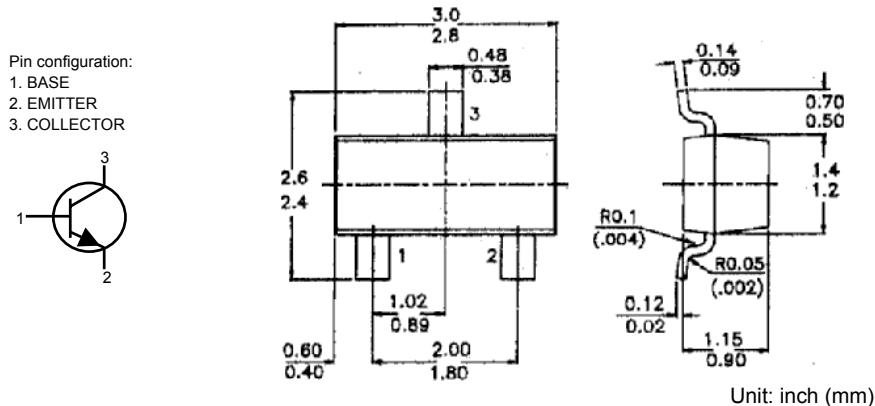


## NPN Small-Signal Darlington Transistors



### Absolute Maximum Ratings

	Symbol	Value	UNIT
Collector-emitter voltage (open base) $V_{BE} = 0$	$V_{CES}$	max 30	V
Collector current (d.c.)	$I_C$	max 300	mA
Total power dissipation up to $T_{amb} = 25^\circ\text{C}$	$P_{tot}$	max 250	mW
Junction Temperature	$T_j$	max 150	$^\circ\text{C}$
D.C. current gain $I_C = 10\text{mA}; V_{CE} = 5\text{V}$	$h_{FE}$	min 5000	
Transition frequency at $f = 100\text{MHz}$ $I_C = 10\text{mA}; V_{CE} = 5\text{V}$	$f_T$	min 125	MHz

### Ratings (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

#### Limiting values

	Symbol	Value	UNIT
Collector-base voltage (open emitter) $V_{BE} = 0$	$V_{CBO}$	max 30	V
Collector-emitter voltage (open base) $V_{BE} = 0$	$V_{CES}$	max 30	V
Collector-base voltage (open collector)	$V_{EBO}$	max 10	V
Collector current	$I_C$	max 300	mA
Total power dissipation up to $T_{amb} = 25^\circ\text{C}$	$P_{tot}$	max 250	mW
Storage Temperature	$T_{stg}$	-65 to +150	$^\circ\text{C}$
Junction Temperature	$T_j$	max 150	$^\circ\text{C}$
Thermal Resistance from junction to Ambient	$R_{thA}$	500	K/mW

**Characteristics** (at Ta=25 °C unless otherwise specified)

	Symbol	Value	UNIT
Collector-emitter breakdown voltage $I_C = 100 \mu\text{A}$	$V_{(BR)CES}$	min 30	V
Emitter-base cut-off current $V_{BE} = 10 \text{ V}$	$I_{EBO}$	max 0.1	$\mu\text{A}$
Emitter-base cut-off current $V_{CB} = 10 \text{ V}$	$I_{CBO}$	max 0.1	$\mu\text{A}$
D.C. current gain $I_C = 10\text{mA}; V_{CE} = 5\text{V}$ $I_C = 100\text{mA}; V_{CE} = 5\text{V}$	$h_{FE}$	min 5000 min 10000	
Collector-emitter saturation voltage $I_C = 100\text{mA}; I_B = 0.1 \text{ mA}$	$V_{CEsat}$	max 1.5	V
Base-emitter On voltage $I_C = 100\text{mA}; V_{CE} = 5\text{V}$	$V_{BE(on)}$	max 2	V
Transition frequency at $f = 100 \text{ MHz}$ $I_C = 10\text{mA}; V_{CE} = 5\text{V}$	$f_T$	min 125	$\text{MHz}$