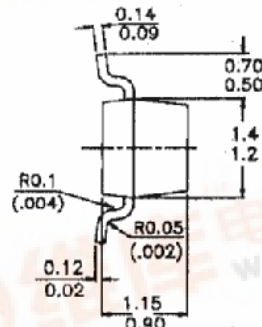
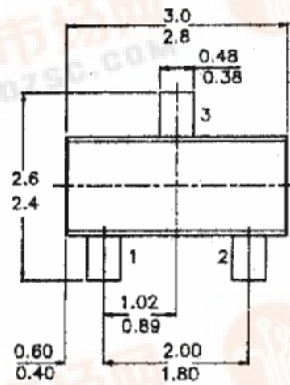
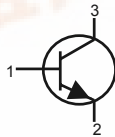




CMBTA13

NPN Small-Signal Darlington Transistors

Pin configuration:
1. BASE
2. EMITTER
3. COLLECTOR



Unit: inch (mm)

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