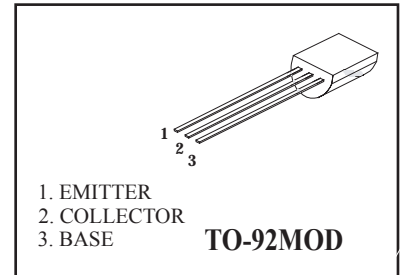
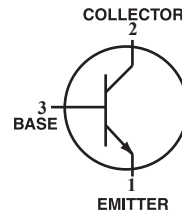


NPN General Purpose Transistors

(Pb) Lead(Pb)-Free



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO} 2SC1383 2SC1384	25 50	Vdc
Collector-Base Voltage	V_{CBO} 2SC1383 2SC1384	30 60	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Collector Current-Continuous	I_C	1.0	Adc
Peak Collector Current	$I_{cp}(DC)$	1.5	Adc

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Total Device Dissipation Alumina Substrate, (1) $T_A=25^\circ C$ Derate above $25^\circ C$	P_D	1.0 8.0	mW mW/ $^\circ C$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	125	$^\circ C/W$
Junction and Storage, Temperature	T_J, T_{stg}	-55 to +150	$^\circ C$

DEVICE MARKING

2SC1383=2SC1383, 2SC1384=2SC1384

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C=2.0\text{mAdc}, I_B=0$)	2SC1383 2SC1384	$V_{(BR)CEO}$	25 50	- -	Vdc
Collector-Base Breakdown Voltage ($I_C=10\ \mu\text{Adc}, I_E=0$)	2SC1383 2SC1384	$V_{(BR)CBO}$	30 60	- -	Vdc
Emitter-Base Breakdown Voltage ($I_E=10\ \mu\text{Adc}, I_C=0$)		$V_{(BR)EBO}$	5.0	- -	Vdc
Collector Cutoff Current ($V_{CB}=20\text{Vdc}, I_E=0$)		I_{CBO}	-	0.1	μAdc

1. Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristics	Symbol	Min	Max	Unit
-----------------	--------	-----	-----	------

ON CHARACTERISTICS

DC Current Gain ($I_C=500\text{ mA dc}, V_{CE}=10\text{ V dc}$) ($I_C=1.0\text{ A dc}, V_{CE}=5.0\text{ V dc}$)	$h_{FE}^{(1)}$ $h_{FE}^{(2)}$	85 50	340 -	- -
Collector-Emitter Saturation Voltage ($I_C=500\text{ mA dc}, I_B=50\text{ mA dc}$)	$V_{CE(sat)}$	-	0.4	Vdc
Base-Emitter Saturation Voltage ($I_C=500\text{ mA dc}, I_B=50\text{ mA dc}$)	$V_{BE(sat)}$	-	1.2	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain-Bandwidth Product ($I_C=50\text{ mA dc}, V_{CE}=10\text{ V dc}, f=30\text{ MHz}$)	f_T	100	-	MHz
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CLASSIFICATION OF h_{FE}

Rank	Q	R	H
Range	85-170	120-240	170-340

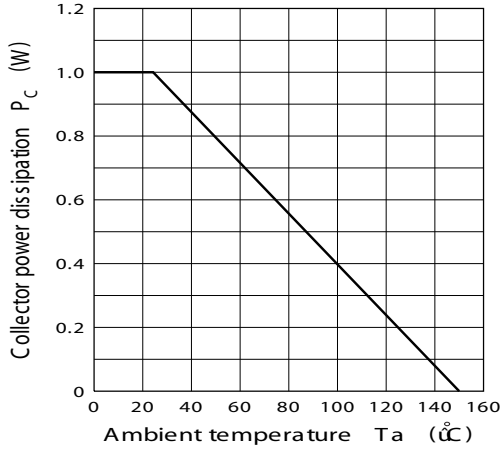


FIG1. Total Power Dissipation Vs Ambient Temperature

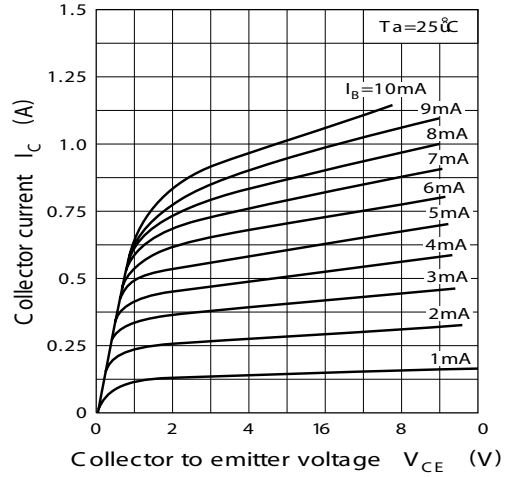


FIG2. Static Characteristic

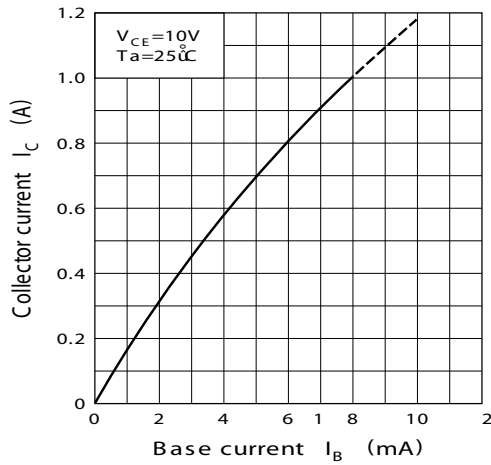


FIG3. Collect Current Vs Base Current

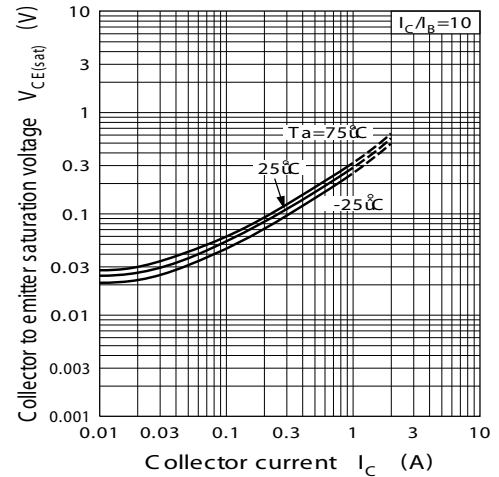


FIG4. Collector-Emitter Saturation Voltage

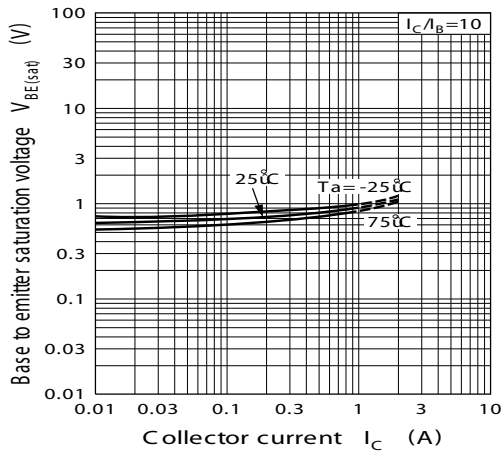


FIG 5. Base-Emitter Saturation Voltage

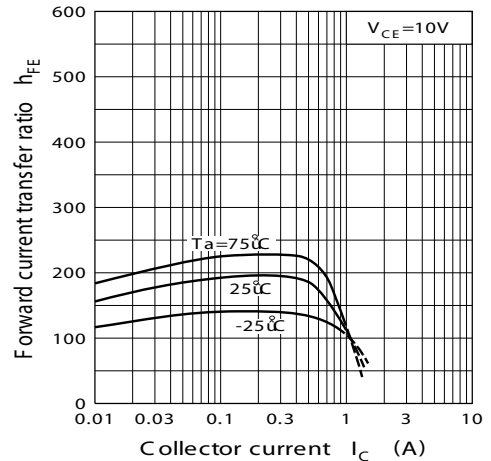


FIG6. Current Gain Bandwidth Product

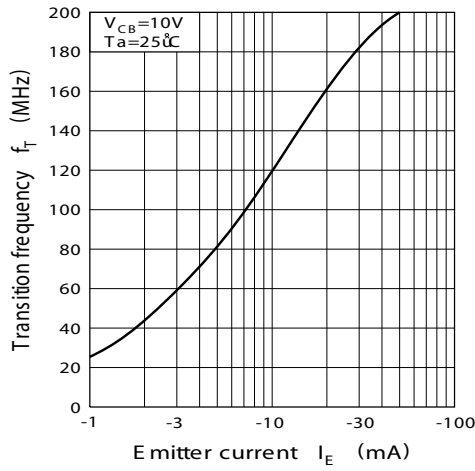


FIG7. Current-Gain-Bandwidth

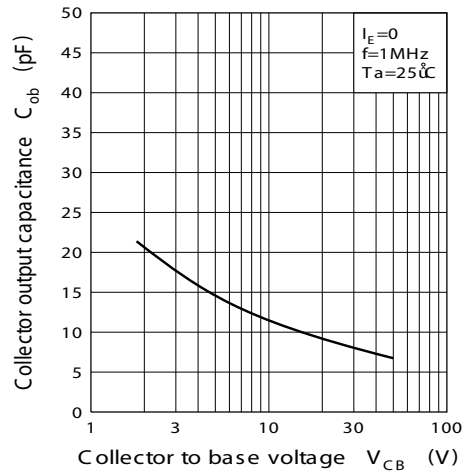


FIG9. Capacitance

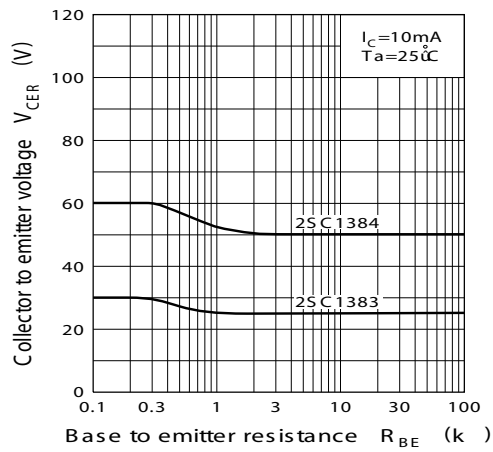
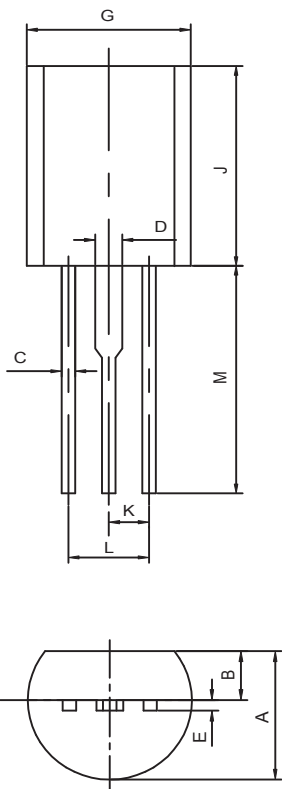


FIG9. V_{CER} VS R_{BE}

TO-92MOD Outline Dimensions

unit:mm



TO-92MOD		
Dim	Min	Max
A	4.700	5.100
B	1.730	2.030
C	0.400	0.600
D	0.900	1.100
E	0.400	0.500
G	5.800	6.200
J	8.400	8.800
K	1.500TYP	
L	2.900	3.100
M	12.20	13.450