



TIGER ELECTRONIC CO.,LTD

TO-92L Plastic-Encapsulate Transistors

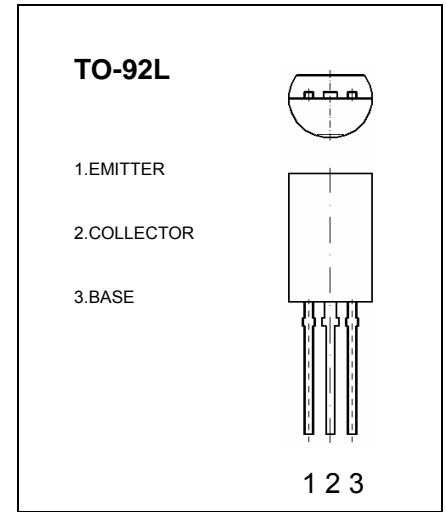
2SC1383 TRANSISTOR (NPN)
2SC1384

FEATURES

- Low collector to emitter saturation voltage $V_{CE(sat)}$.
- Complementary pair with 2SA0683 and 2SA0684.

MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	2SC1383	2SC1384	Units
V_{CBO}	Collector-Base Voltage	30	60	V
V_{CEO}	Collector-Emitter Voltage	25	50	V
V_{EBO}	Emitter-Base Voltage	5		V
I_C	Collector Current –Continuous	1		A
P_C	Collector Power Dissipation	1		W
T_J	Junction Temperature	150		$^\circ\text{C}$
T_{stg}	Storage Temperature	-55-150		$^\circ\text{C}$



ELECTRICAL CHARACTERISTICS ($T_{amb}=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	2SC1383	30		V
			2SC1384	60		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=2\text{mA}, I_B=0$	2SC1383	25		V
			2SC1384	50		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=20\text{V}, I_E=0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=10\text{V}, I_C=500\text{mA}$	85		340	
	$h_{FE(2)}$	$V_{CE}=5\text{V}, I_C=1\text{A}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			1.2	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}$		200		MHz

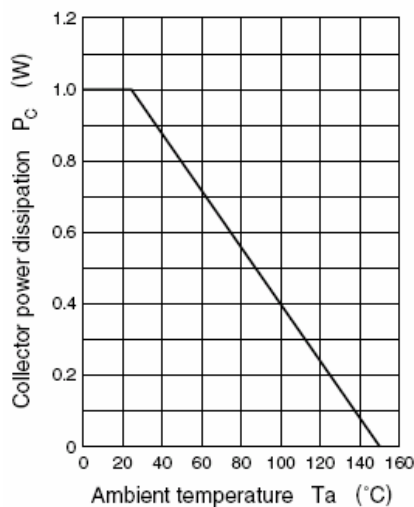
CLASSIFICATION OF $h_{FE(1)}$

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

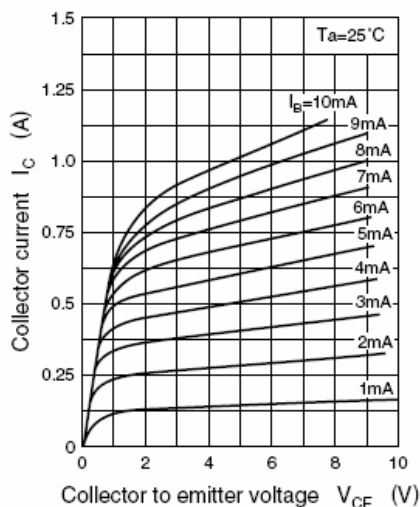
Typical Characteristics

2SC1383,4

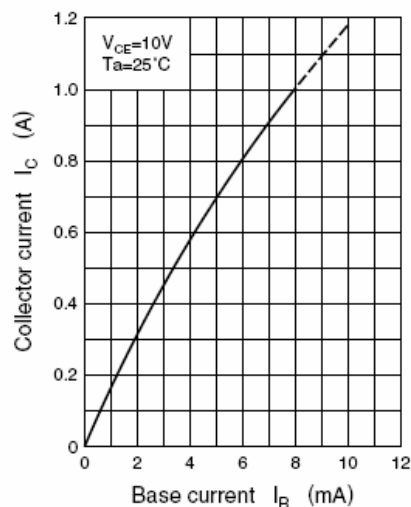
$P_C - T_a$



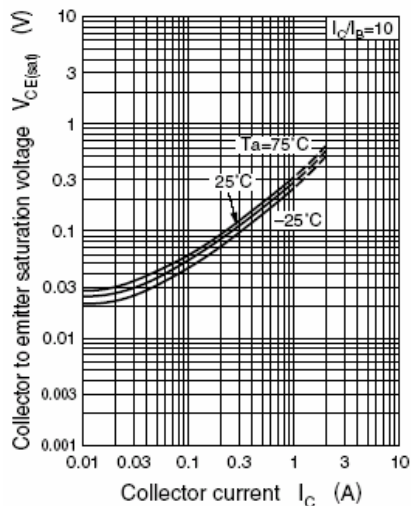
$I_C - V_{CE}$



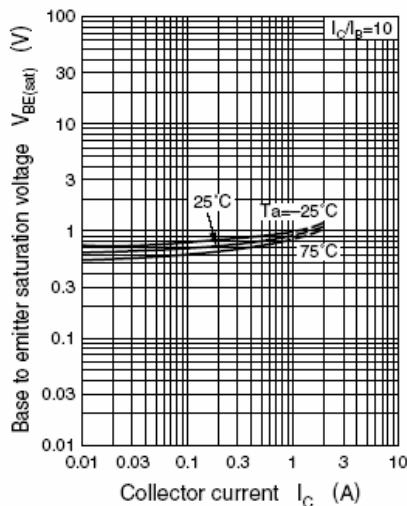
$I_C - I_B$



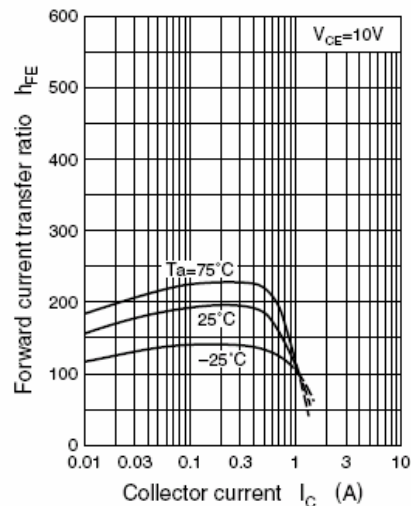
$V_{CE(sat)} - I_C$



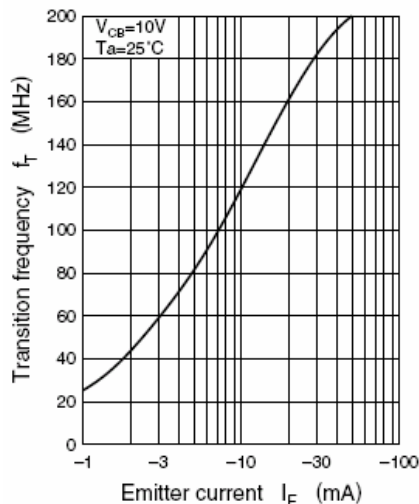
$V_{BE(sat)} - I_C$



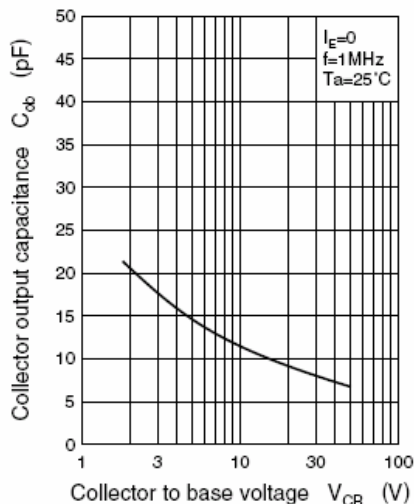
$h_{FE} - I_C$



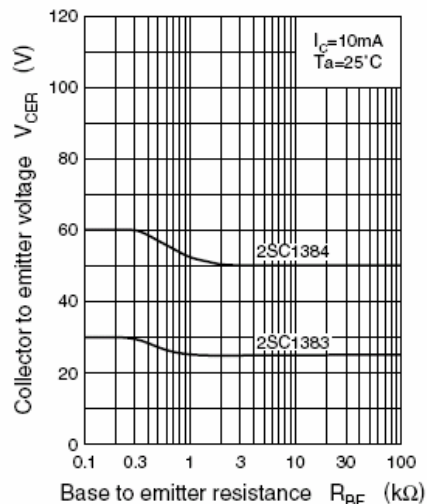
$f_T - I_E$



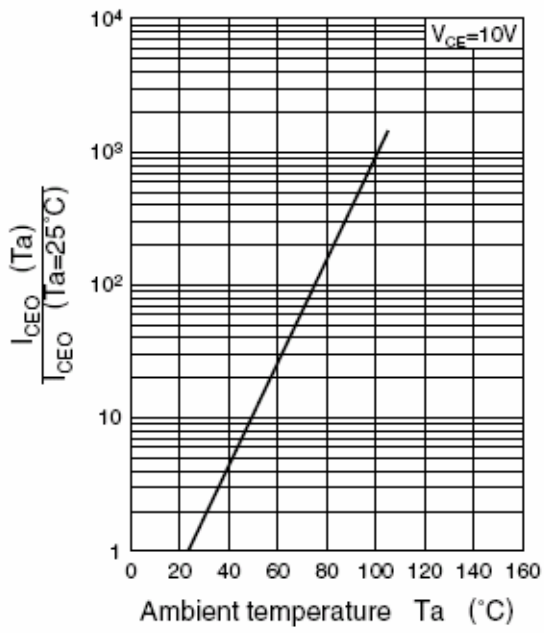
$C_{ob} - V_{CB}$



$V_{CER} - R_{BE}$



$I_{CEO} - T_a$



Area of safe operation (ASO)

