

# TO-92L Plastic-Encapsulate Transistors

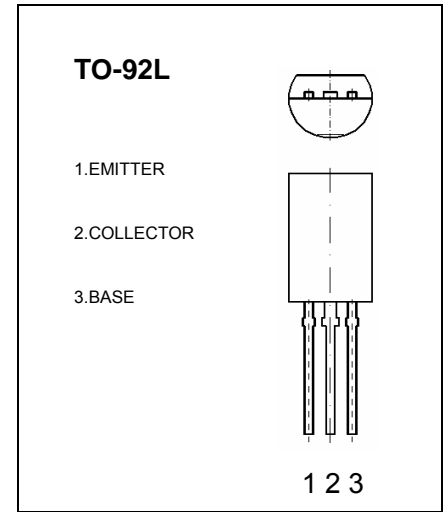
## 2SC1383 TRANSISTOR (NPN) 2SC1384

### 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 2SC1383 2SC1384	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	30			V
			60			
Collector-emitter breakdown voltage 2SC1383 2SC1384	$V_{(BR)CEO}$	$I_C=2\text{mA}, I_B=0$	25			V
			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	$\mu\text{A}$
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

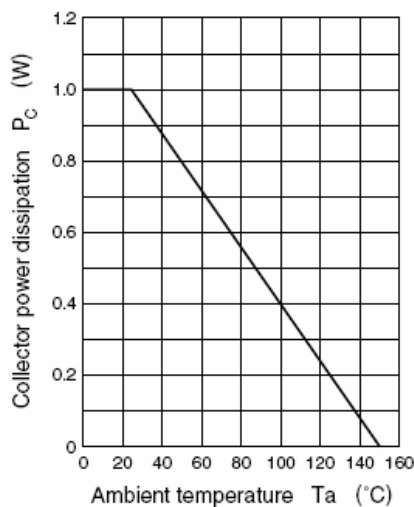
### CLASSIFICATION OF $h_{FE(1)}$

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

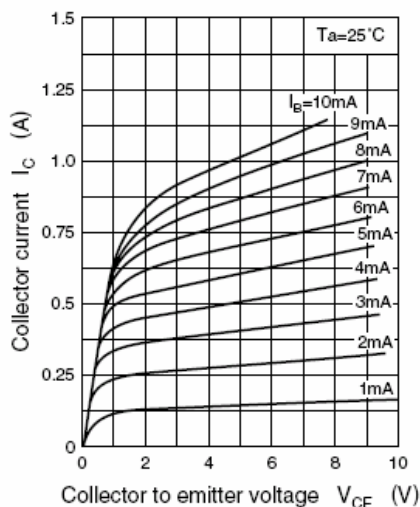
# Typical Characteristics

# 2SC1383,4

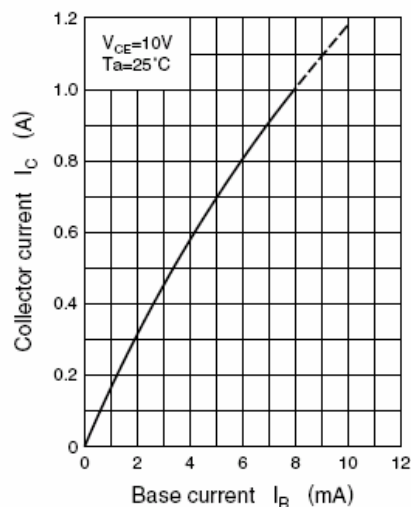
$P_C - T_a$



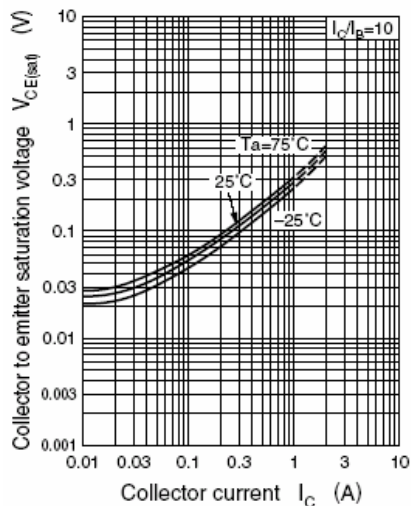
$I_C - V_{CE}$



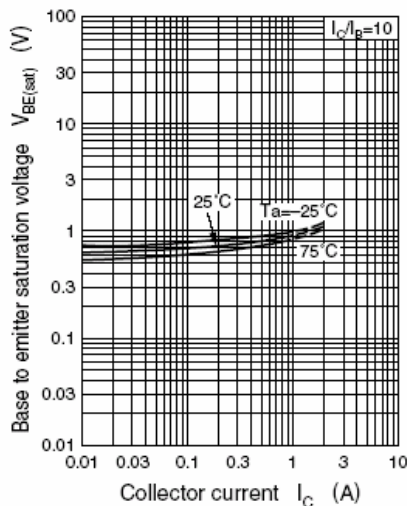
$I_C - I_B$



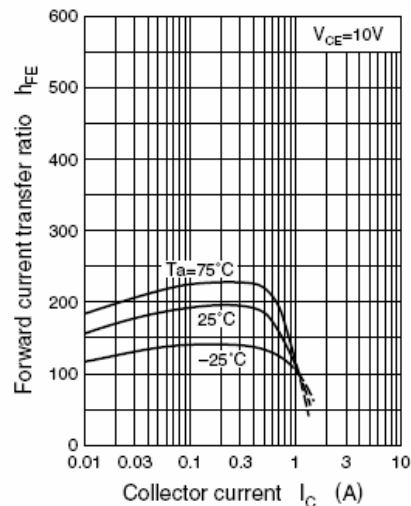
$V_{CE(sat)} - I_C$



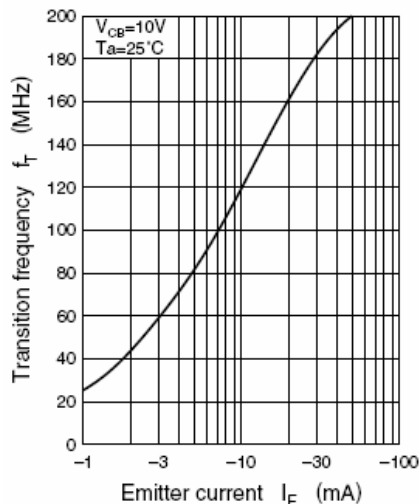
$V_{BE(sat)} - I_C$



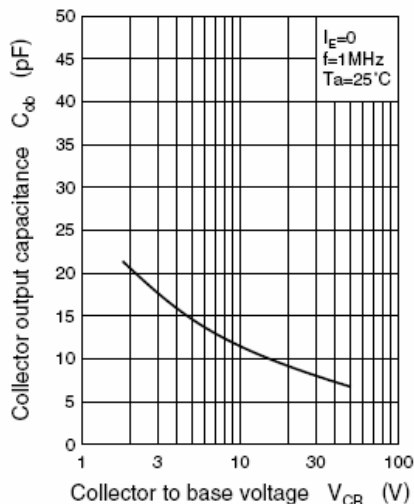
$h_{FE} - I_C$



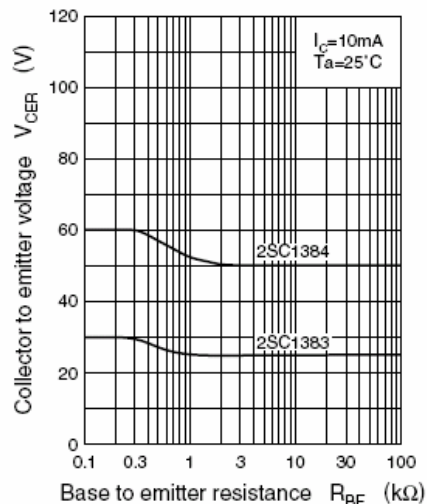
$f_T - I_E$



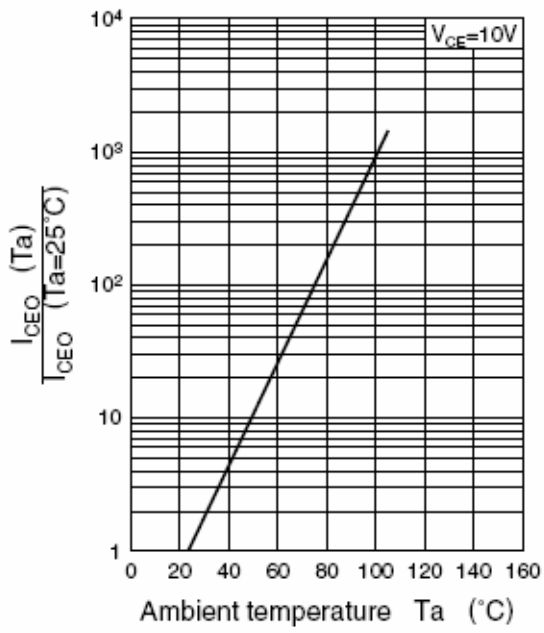
$C_{ob} - V_{CB}$



$V_{CER} - R_{BE}$



$I_{CEO} - T_a$



Area of safe operation (ASO)

