

**Electrical Characteristics @  $T_A=25^{\circ}\text{C}$  Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-100			V	$I_C=-1\text{mA}$ , $I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-100			V	$I_C=-30\text{mA}$ , $I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	$I_E=-10\text{mA}$ , $I_C=0$
Collector Cutoff Current	$I_{CBO}$			-10	$\mu\text{A}$	$V_{CB}=-100\text{V}$ , $I_E=0$
Collector-Emitter Cutoff Current	$I_{CEO}$			-10	$\mu\text{A}$	$V_{CE}=-50\text{V}$ , $I_B=0$
Emitter Cutoff Current	$I_{EBO}$			-2	mA	$V_{EB}=-5\text{V}$ , $I_C=0$
DC Current Gain	$h_{FE(1)}$	1000		12000		$V_{CE}=-4\text{V}$ , $I_C=-4\text{A}$
	$h_{FE(2)}$	100				$V_{CE}=-4\text{V}$ , $I_C=-8\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-2.0	V	$I_C=-4\text{A}$ , $I_B=-16\text{mA}$
				-4.0	V	$I_C=-8\text{A}$ , $I_B=-80\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			-4.5	V	$I_C=-8\text{A}$ , $I_B=-80\text{mA}$
Base-Emitter Voltage	$V_{BE}$			-2.8	V	$V_{CE}=-4\text{V}$ , $I_C=-4\text{A}$
Output Capacitance	$C_{ob}$			300	pF	$V_{CB}=-10\text{V}$ , $I_E=0$ , $f=0.1\text{MHz}$

## Curve Characteristics

Fig. 1 - Static Characteristics

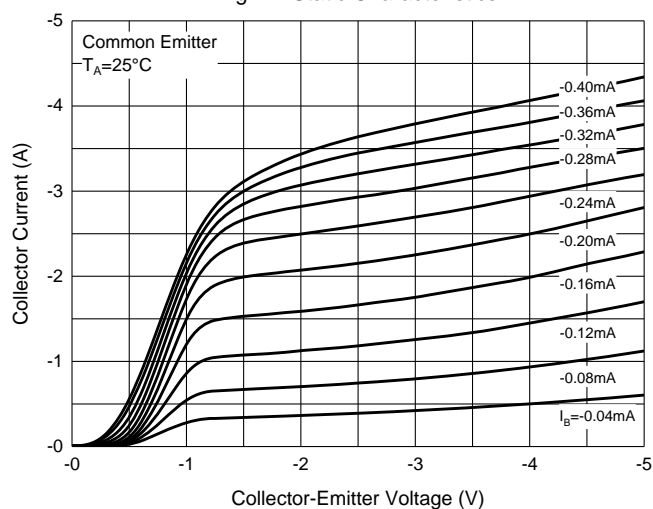


Fig. 2 - DC Current Gain Characteristics

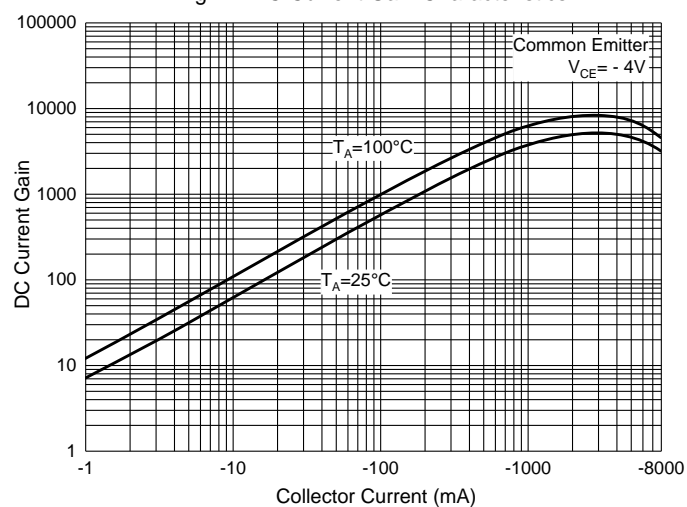


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

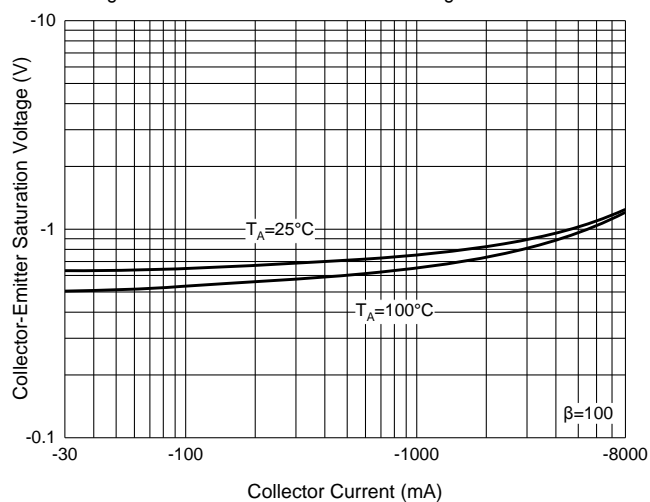


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

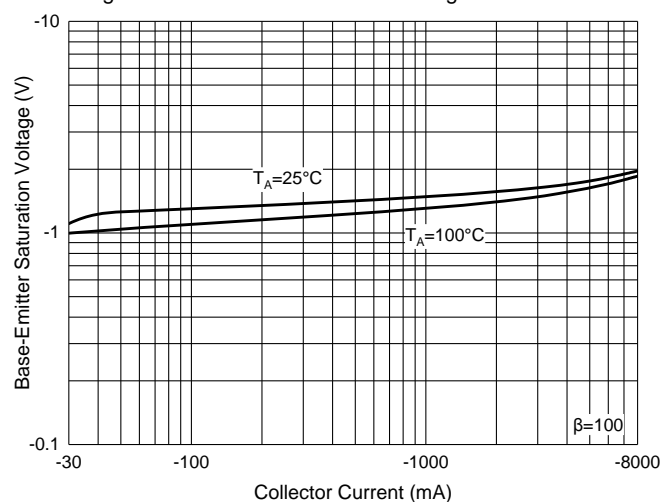
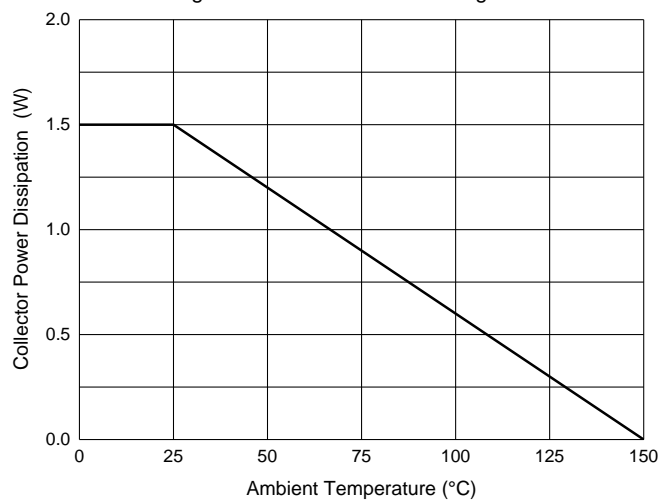


Fig. 5 - Collector Power Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/Reel

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

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