Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage(2)	$V_{(BR)CBO}$	60			V	I_C=10μA, I_E=0
Collector-Emitter Breakdown Voltage(2)	$V_{(BR)CEO}$	40			V	I_C=1mA, I_B=0
Emitter-Base Breakdown Voltage(2)	$V_{(BR)EBO}$	5			V	I_E=10μA, I_C=0
Base Cutoff Current (2)	I_{BL}			50	nA	V_{CE}=30V, $V_{EB(OFF)}$=3V
Collector Cutoff Current (2)	I_{CEX}			50	nA	V_{CE}=30V, $V_{EB(OFF)}$=3V
DC Current Gain(2)	$h_{FE(1)}$	40				V_{CE}=1V, I_C=0.1mA
	$h_{FE(2)}$	70				V_{CE}=1V, I_C=1mA
	$h_{FE(3)}$	100		300		V_{CE}=1V, I_C=-10mA
	$h_{FE(4)}$	60				V_{CE}=1V, I_C=50mA
	$h_{FE(5)}$	30				V_{CE}=1V, I_C=500mA
Collector-Emitter Saturation Voltage(2)	$V_{CE(sat)}$			0.25	V	I_C=10mA, I_B=1mA
				0.3	V	I_C=50mA, I_B=5mA
Base-Emitter Saturation Voltage(2)	$V_{BE(sat)}$	0.65		0.85	V	I_C=10mA, I_B=1mA
				0.95	V	I_C=50mA, I_B=5mA
Output Capacitance	C_{cbo}			4.0	pF	V_{CB}=5V, I_E=0, f=1MHz,
Input Capacitance	C_{ibo}			8.0	pF	V_{BE}=0.5V, I_C=0, f=1MHz,
Input Impedance	h_{ie}	1		10	KΩ	V_{CE}=10V, I_C=1mA, f=1KHz
Voltage Feedback Ratio	h_{re}	0.5		8	x10^4	
Small Signal Current Gain	h_{fe}	100		400		
Output Admittance	h_{oe}	1		40	uS	
Transition Frequency	f_T	300			MHz	V_{CE}=20V, I_C=10mA, f=100MHz
Noise Figure	NF			5	dB	V_{CE}=5V, I_C=0.1mA R_S=1KΩ, f=1KHz
Delay Time	t_d			35	ns	V_{CC}=3V, I_C=0.1mA
Rise Time	t_r			35	ns	$V_{BE(OFF)}$=-0.5V, I_{B1}=1mA

Note: 2.Pulse Width ≤ 300μs, Duty Cycle≤2.0%

Curve Characteristics

Fig. 1 - Static Characteristics

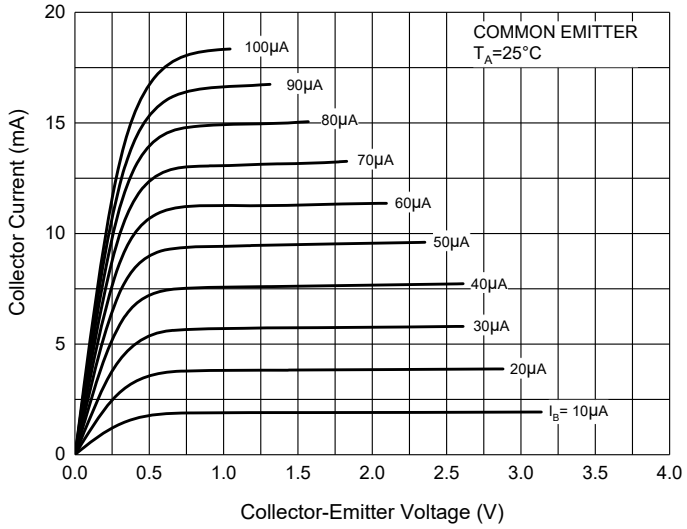


Fig. 2 - DC Current Gain Characteristics

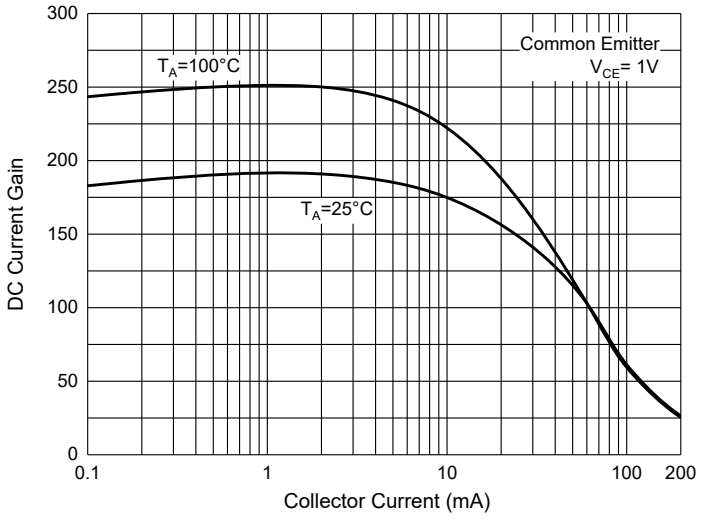


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

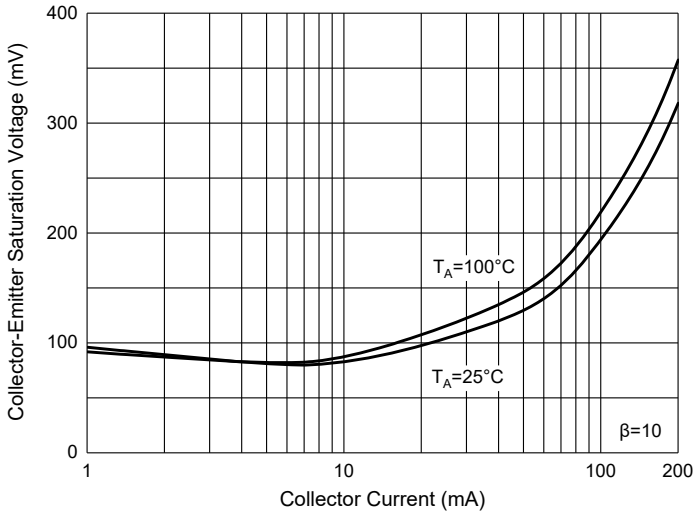


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

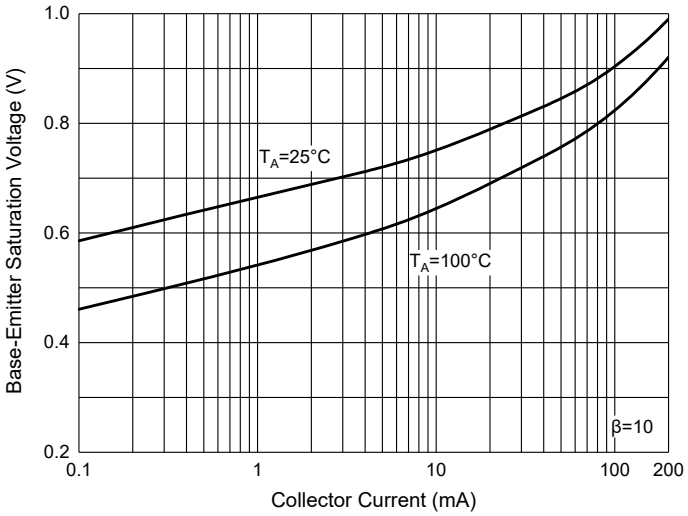


Fig. 5 - Base-Emitter Voltage Characteristics

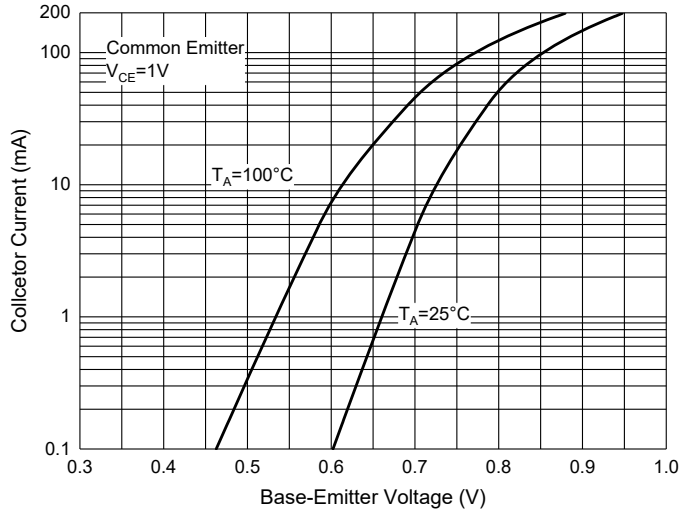
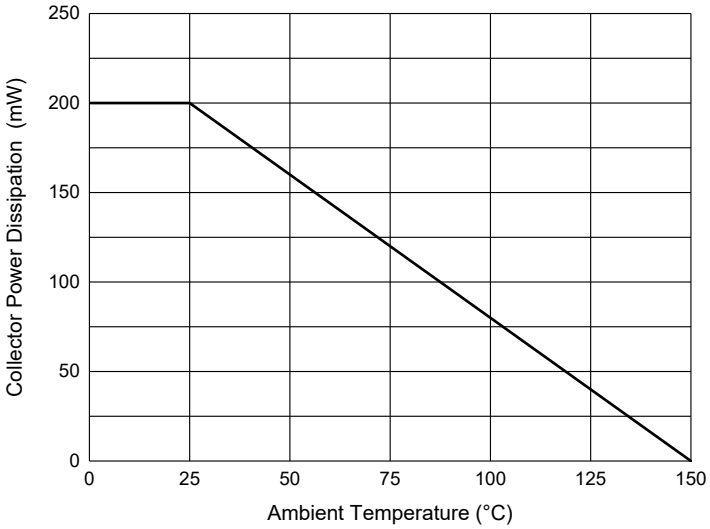


Fig. 6 - Collector Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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