Features

- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

NPN/PNP General Purpose Transistors

Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55℃ to +150℃
- Storage Temperature Range: -55℃ to +150℃
- Thermal Resistance: 338℃/W Junction to Ambient

Per Device

Parameter	Symbol	Rating	Unit
Total Power Dissipation	P_{tot}	600	mW

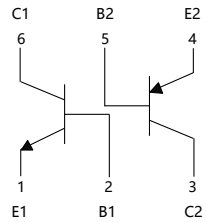
NPN Pin1,2,6

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	0.5	A
Peak Collector Current	I_{CM}	1	A
Peak Base Current	I_{BM}	200	mA
Power Dissipation	P_C	370	mW

PNP Pin3,4,5

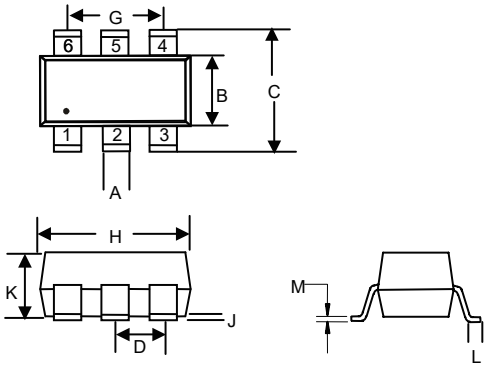
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-0.5	A
Peak Collector Current	I_{CM}	-1	A
Peak Base Current	I_{BM}	-200	mA
Power Dissipation	P_C	370	mW

Internal Structure



Marking: 8017

SOT23-6L



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.012	0.020	0.30	0.50	
B	0.051	0.070	1.30	1.80	
C	0.087	0.126	2.20	3.20	
D	0.037		0.95		TYP.
G	0.074		1.90		TYP.
H	0.106	0.122	2.70	3.10	
J	0.002	0.006	0.05	0.15	
K	0.030	0.051	0.75	1.30	
L	0.012	0.024	0.30	0.60	
M	0.003	0.008	0.08	0.22	

NPN Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50			V	I_C=10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45			V	I_C=10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	I_E=1μA, I_C=0
Collector-Base Cutoff Current	I_{CBO}			100	nA	V_{CB}=20V, I_E=0
				5	μA	V_{CB}=20V, I_E=0, T_J=150℃
Emitter-Base Cutoff Current	I_{EBO}			100	nA	V_{EB} =5V, I_C=0
DC Current Gain (Note1)	$h_{FE(1)}$	160		400		V_{CE}=1V, I_C=100mA
	$h_{FE(2)}$	40				V_{CE}=1V, I_C=500mA
Collector-Emitter Saturation Voltage(Note1)	$V_{CE(sat)}$			0.7	V	I_C=500mA, I_B=50mA
Base-Emitter Voltage(Note1)(Note2)	V_{BE}			1.2	V	V_{CE}=1V, I_C=500mA
Collector Capacitance	C_c		5		pF	V_{CB}=10V, I_E=I_e=0, f=1MHz
Transition Frequency	f_T	100			MHz	V_{CE}=5V, I_C=10mA, f=100MHz

PNP Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-50			V	I_C=-10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-45			V	I_C=-10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	I_E=-1μA, I_C=0
Collector-Base Cutoff Current	I_{CBO}			-100	nA	V_{CB}=-20V, I_E=0
				-5	μA	V_{CB}=-20V, I_E=0, T_J=150℃
Emitter-Base Cutoff Current	I_{EBO}			-100	nA	V_{EB} =-5V, I_C=0
DC Current Gain (Note1)	$h_{FE(1)}$	160		400		V_{CE-}=1V, I_C=-100mA
	$h_{FE(2)}$	40				V_{CE}=-1V, I_C=-500mA
Collector-Emitter Saturation Voltage(Note1)	$V_{CE(sat)}$			-0.7	V	I_C=-500mA, I_B=-50mA
Base-Emitter Voltage(Note1)(Note2)	V_{BE}			-1.2	V	V_{CE}=-1V, I_C=-500mA
Collector Capacitance	C_c		9		pF	V_{CB}=-10V, I_E=I_e=0, f=1MHz
Transition Frequency	f_T	80			MHz	V_{CE}=-5V, I_C=-10mA, f=100MHz

Notes: 1.Pluse Width ≤ 300μs, Duty Cycle ≤ 2.0%

2.V_{BE} Decreases By Approximately -2mV/℃ With Increasing Temperature.

Curve Characteristics (NPN Transistor)

Fig. 1 - Static Characteristics

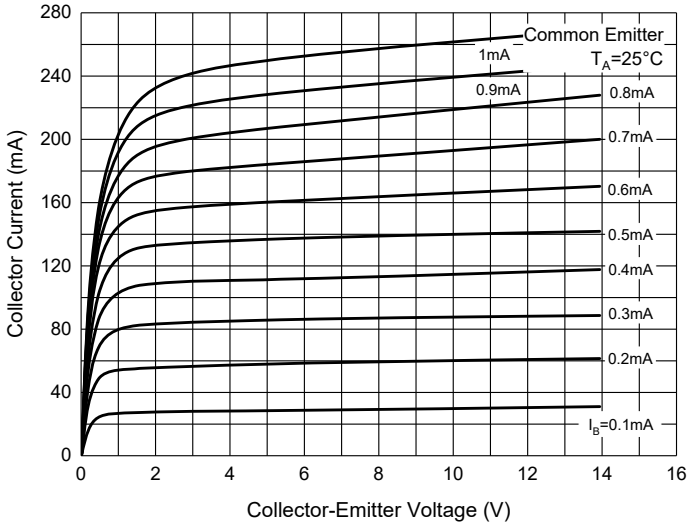


Fig. 2 - DC Current Gain Characteristics

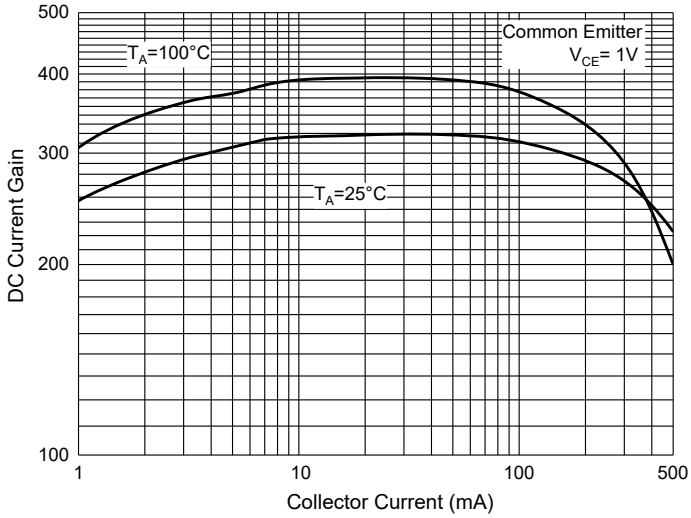


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

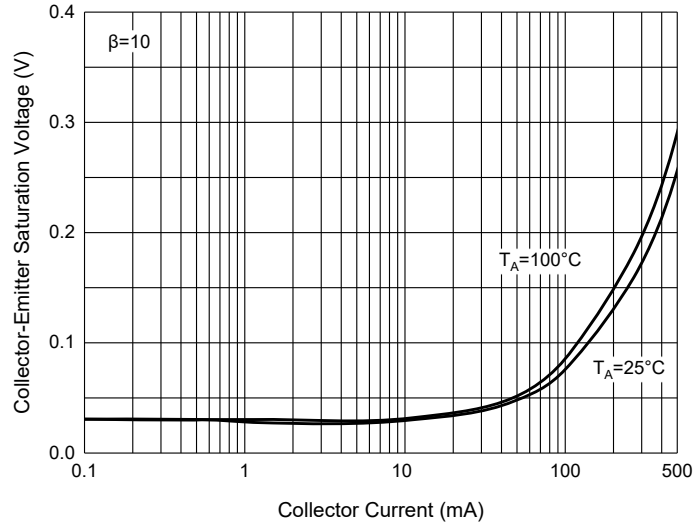


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

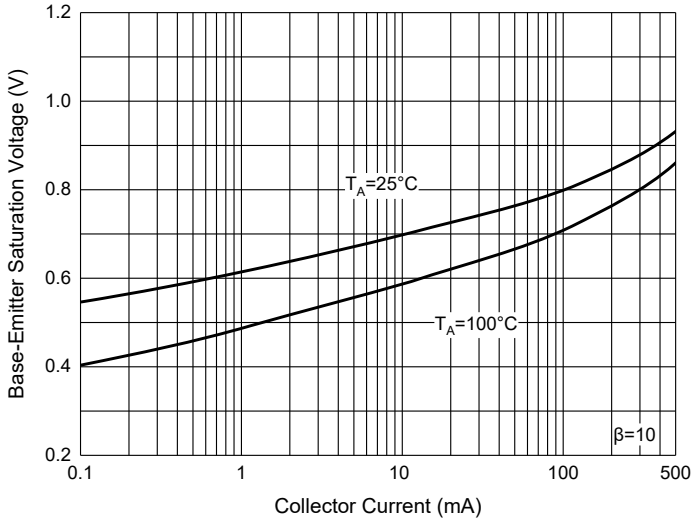


Fig. 5 - Base-Emitter Voltage Characteristics

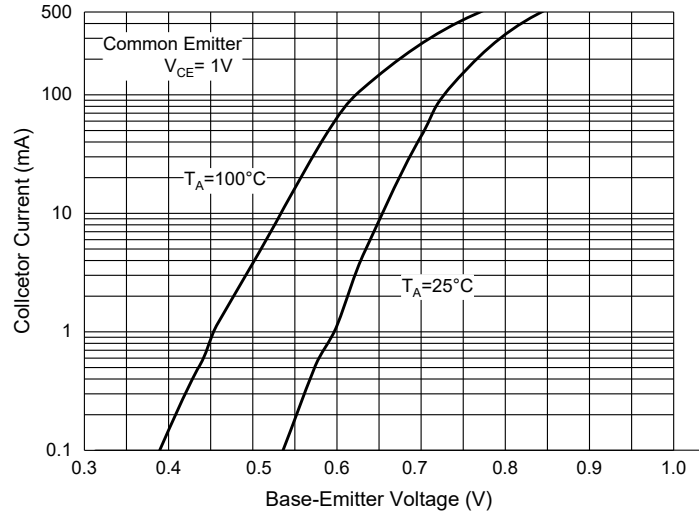
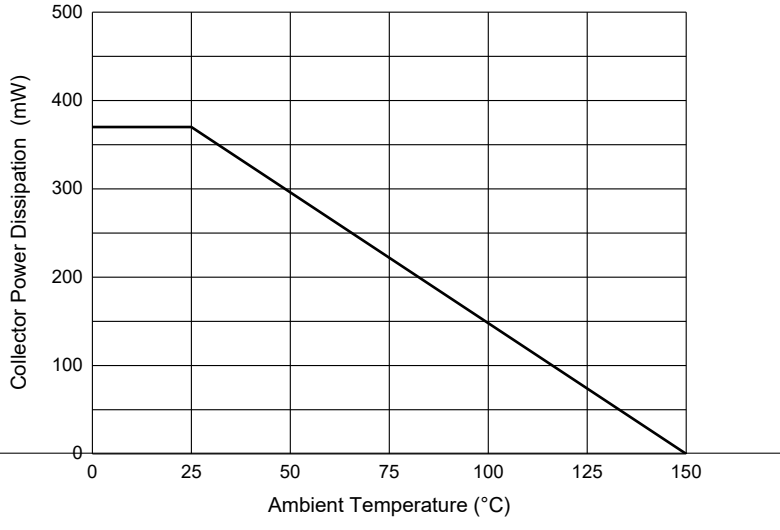


Fig. 6 - Collector Power Derating Curve



Curve Characteristics (PNP Transistor)

Fig. 7 - Static Characteristics

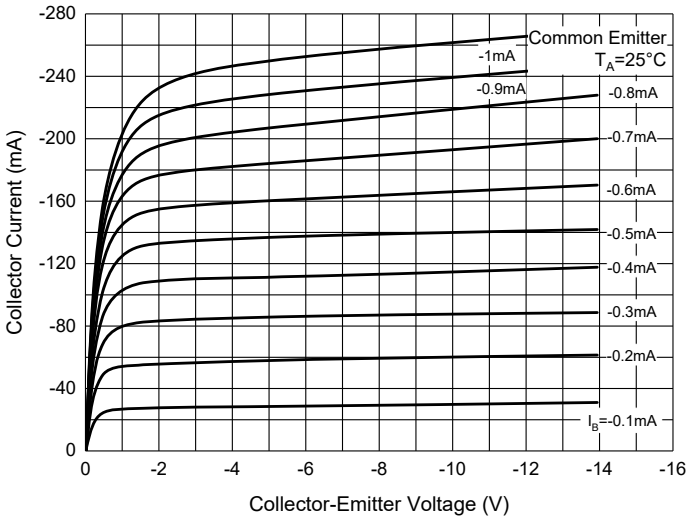


Fig. 8 - DC Current Gain Characteristics

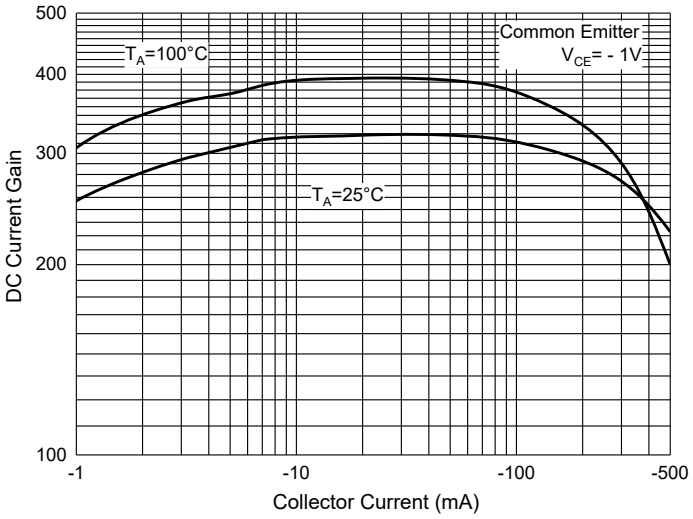


Fig. 9 - Collector-Emitter Saturation Voltage Characteristics

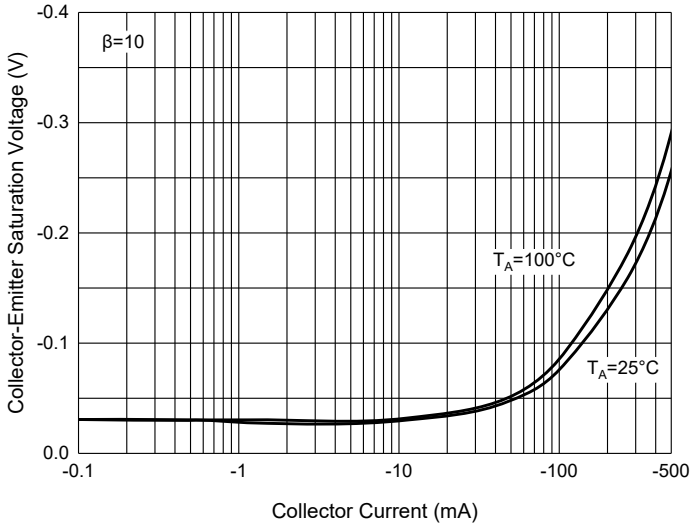


Fig. 10 - Base-Emitter Saturation Voltage Characteristics

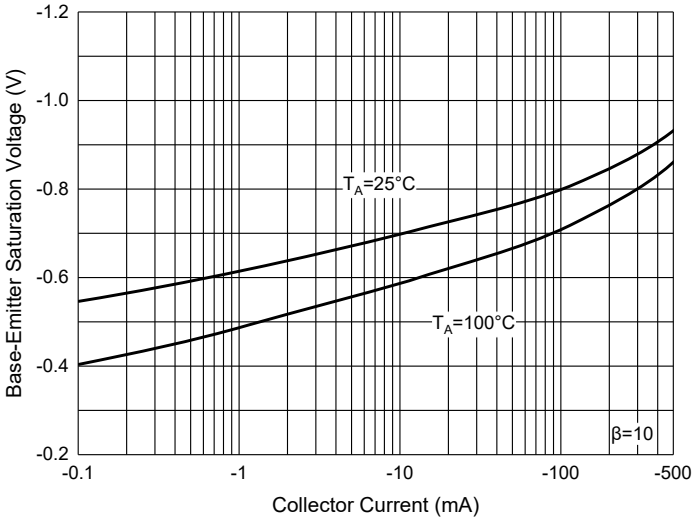


Fig. 11 - Base-Emitter Voltage Characteristics

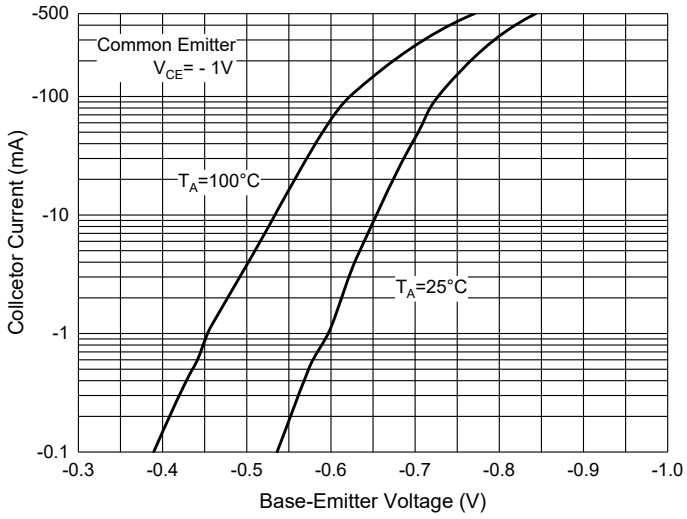
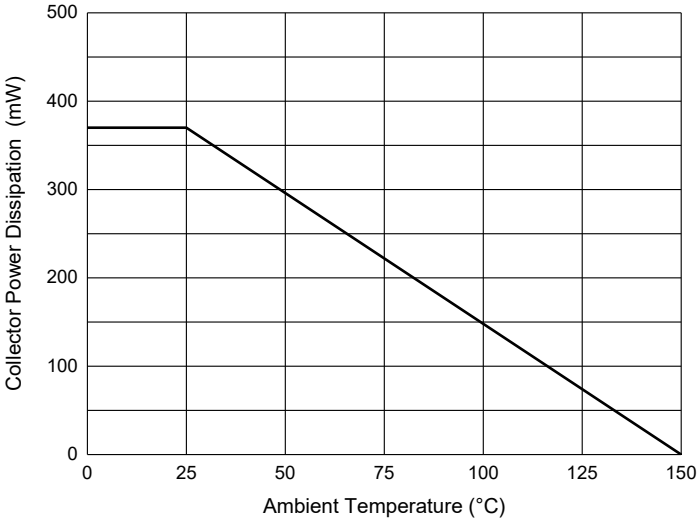


Fig. 12 - Collector Power Derating Curve



Ordering Information

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

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

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