

**Features**

- Complementary Pair: NPN(2222A) PNP(2907A)
- Total Device Dissipation 700mW
- Ideal for Low Power Amplification and Switching
- Ultra-small Surface Mount Package
- 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)

**Maximum Ratings @ 25°C Unless Otherwise Specified**

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C

**NPN(2222A) Pin1,5,6**

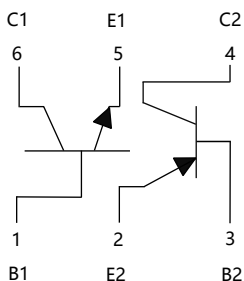
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	75	V
Collector-Emitter Voltage	$V_{CEO}$	40	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	0.6	A

**PNP(2907A) Pin2,3,4**

Collector-Base Voltage	$V_{CBO}$	-60	V
Collector-Emitter Voltage	$V_{CEO}$	-60	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-0.6	A

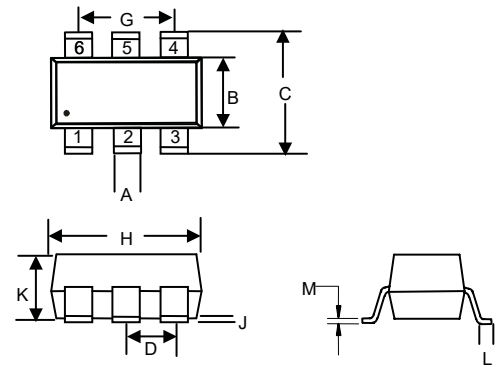
**Marking: L27**

**Internal Structure**



**NPN/PNP  
Small Signal Surface  
Mount Transistors**

**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 2222A Electrical Characteristics @ 25°C Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	75			V	$I_C=10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40			V	$I_C=10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6			V	$I_E=10\mu A, I_C=0$
Collector-Base Cutoff Current	$I_{CBO}$			10	nA	$V_{CB}=60V, I_E=0$
Collector Cutoff Current	$I_{CEX}$			10	nA	$V_{CE}=60V, V_{BE}=-3V$
Emitter-Base Cutoff Current	$I_{EBO}$			10	nA	$V_{EB}=3.0V, I_C=0$
DC Current Gain (Note1)	$h_{FE(1)}$	35				$V_{CE}=10V, I_C=0.1mA$
	$h_{FE(2)}$	50				$V_{CE}=10V, I_C=1mA$
	$h_{FE(3)}$	75				$V_{CE}=10V, I_C=10mA$
	$h_{FE(4)}$	100		300		$V_{CE}=10V, I_C=150mA$
	$h_{FE(5)}$	40				$V_{CE}=10V, I_C=500mA$
	$h_{FE(6)}$	35				$V_{CE}=1V, I_C=150mA$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.3	V	$I_C=150mA, I_B=15mA$
				1.0	V	$I_C=500mA, I_B=50mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	0.6		1.2	V	$I_C=150mA, I_B=15mA$
				2.0	V	$I_C=500mA, I_B=50mA$
Transition Frequency	$f_T$	300			MHz	$V_{CE}=20V, I_C=20mA, f=100MHz$
Output Capacitance	$C_{ob}$			8	pF	$V_{CB}=10V, I_E=0, f=1MHz$
Noise Figure	NF			4	dB	$V_{CE}=10V, I_C=0.1mA, f=1KHz, R_S=1K\Omega$

**PNP 2907A Electrical Characteristics @ 25°C Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-60			V	$I_C=-10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-60			V	$I_C=-10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	$I_E=-10\mu A, I_C=0$
Collector-Base Cutoff Current	$I_{CBO}$			-10	nA	$V_{CB}=-50V, I_E=0$
Collector Cutoff Current	$I_{CEX}$			-50	nA	$V_{CE}=-30V, V_{BE}=0.5V$
DC Current Gain (Note1)	$h_{FE(1)}$	75				$V_{CE}=-10V, I_C=-0.1mA$
	$h_{FE(2)}$	100				$V_{CE}=-10V, I_C=-1mA$
	$h_{FE(3)}$	100				$V_{CE}=-10V, I_C=-10mA$
	$h_{FE(4)}$	100		300		$V_{CE}=-10V, I_C=-150mA$
	$h_{FE(5)}$	50				$V_{CE}=-10V, I_C=-500mA$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-0.4	V	$I_C=-150mA, I_B=-15mA$
				-1.6	V	$I_C=-500mA, I_B=-50mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			-1.3	V	$I_C=-150mA, I_B=-15mA$
				-2.6	V	$I_C=-500mA, I_B=-50mA$
Transition Frequency	$f_T$	200			MHz	$V_{CE}=-20V, I_C=-50mA, f=100MHz$
Output Capacitance	$C_{ob}$			8	pF	$V_{CB}=-5V, I_E=0, f=1MHz$

Note: 1. Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$

### Curve Characteristics (NPN Transistor)

Fig. 1 - DC Current Gain Characteristics

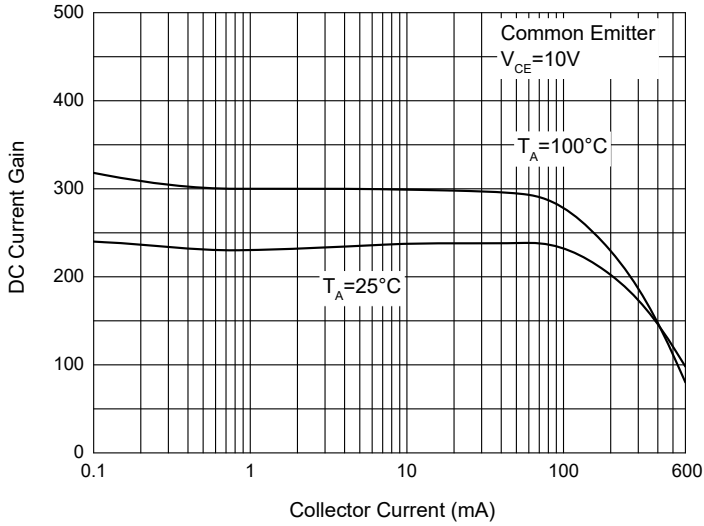


Fig. 2 - Collector-Emitter Saturation Voltage Characteristics

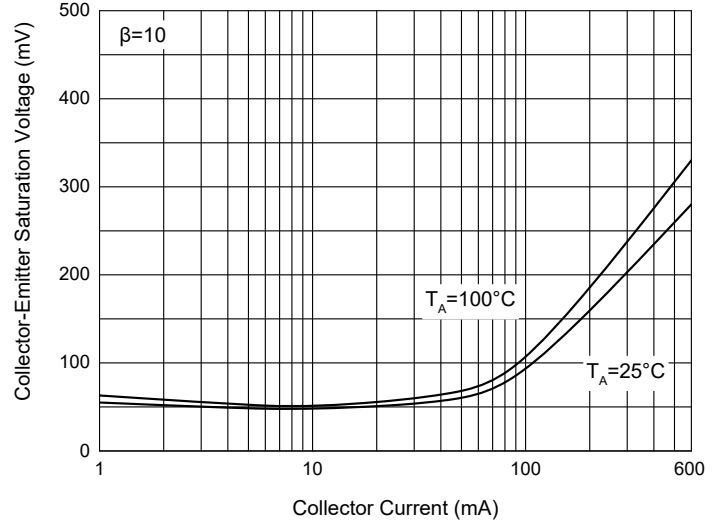


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

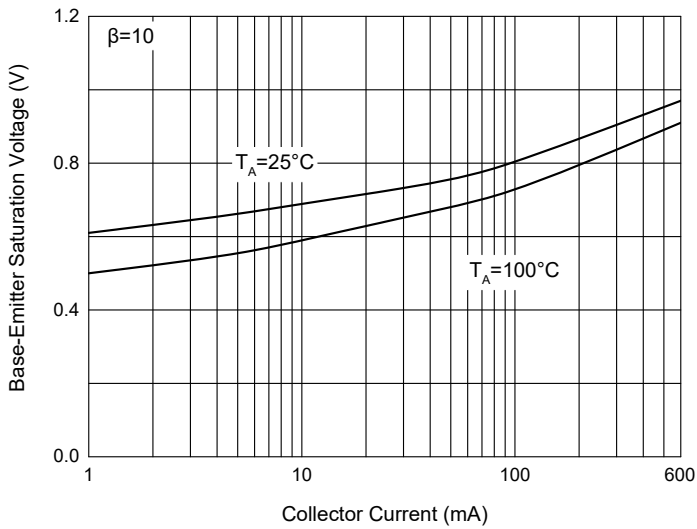
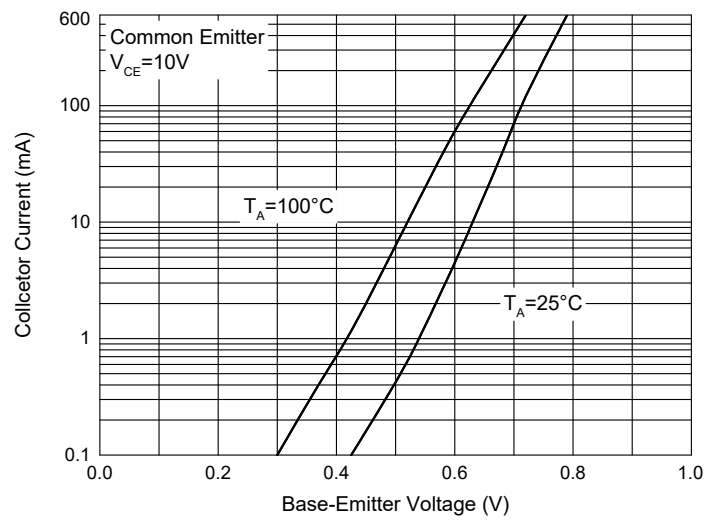


Fig. 4 - Base-Emitter Voltage Characteristics



### Curve Characteristics (PNP Transistor)

Fig. 5 - DC Current Gain Characteristics

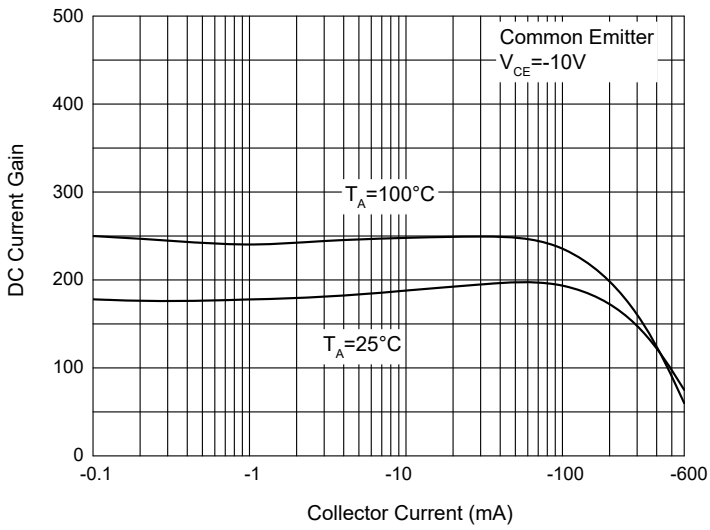


Fig. 6 - Collector-Emitter Saturation Voltage Characteristics

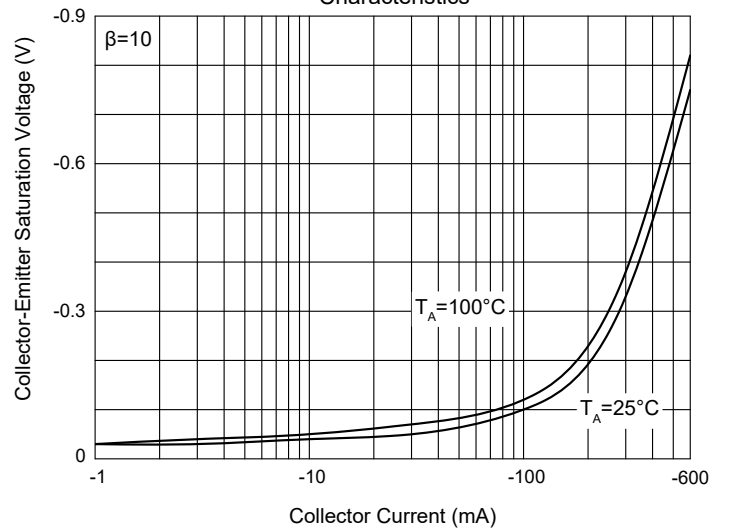


Fig. 7 - Base-Emitter Saturation Voltage Characteristics

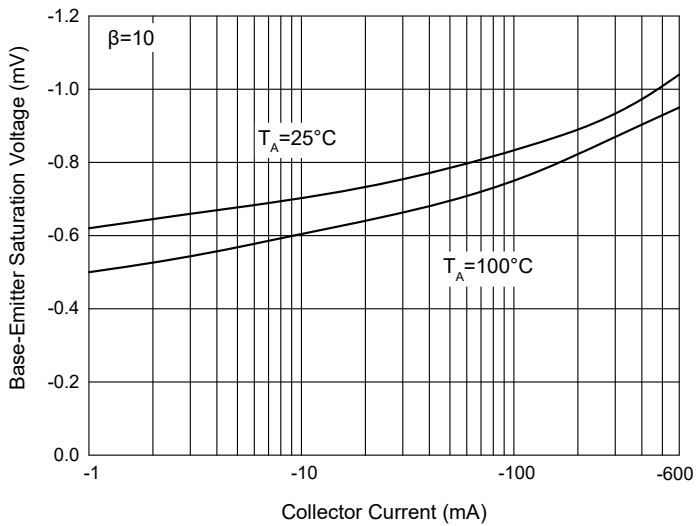
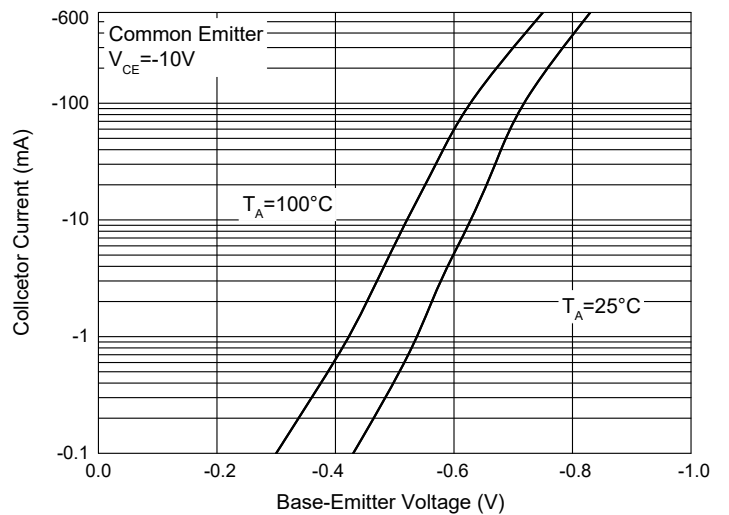
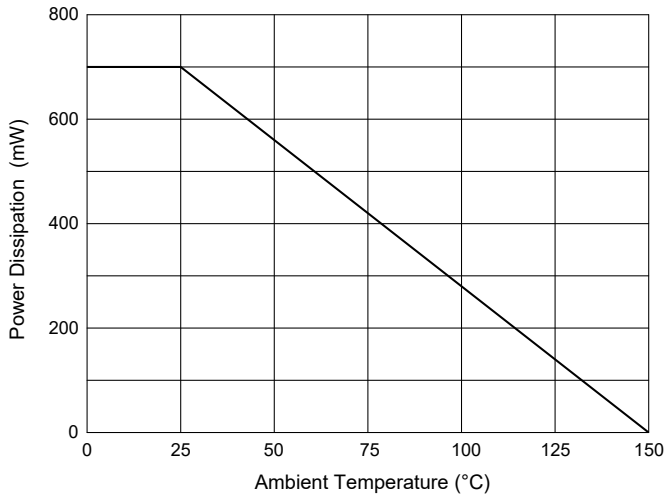


Fig. 8 - Base-Emitter Voltage Characteristics



### Curve Characteristics (Total Device)

Fig. 9 - 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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