

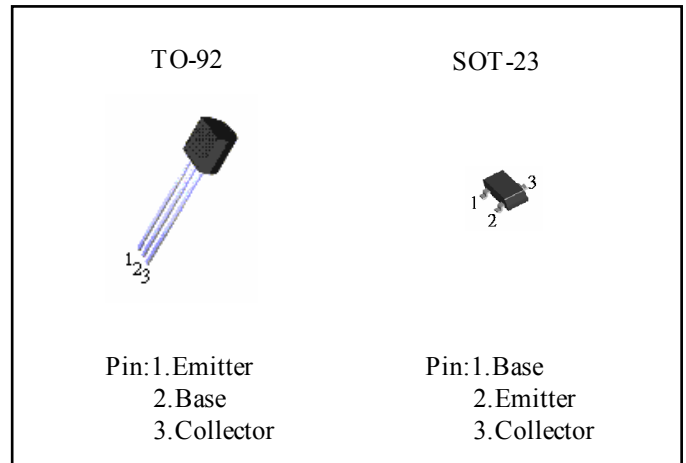
**NPN Epitaxial Silicon Transistors**

**GENERAL PURPOSE TRANSISTOR**

- Collector-Emitter Voltage:  $V_{CE0} = 40V$
- Collector Dissipation:  $P_{D(max)} = 625\text{ mW}$  --- TO-92
- $300\text{ mW}$  --- SOT-23

**ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)**

Characteristics	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
Collector Dissipation	$P_D$	0.62	W
		0.3	W
TO-92	$T_j$	150	°C
SOT-23	$T_{stg}$	-55~150	°C
Junction Temperature			
Storage Temperature			



**ORDERING INFORMATION**

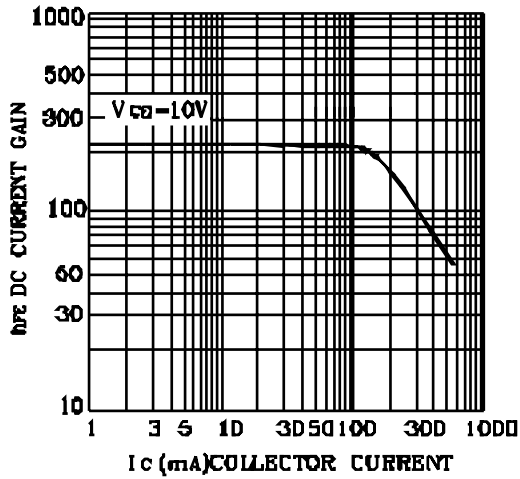
Device	Operating Temperature	Package
PJ2N2222ACT	-20°C ~ +85°C	TO-92
PJ2N2222ACX		SOT-23

**ELECTRICAL CHARACTERISTICS (Ta=25°C)**

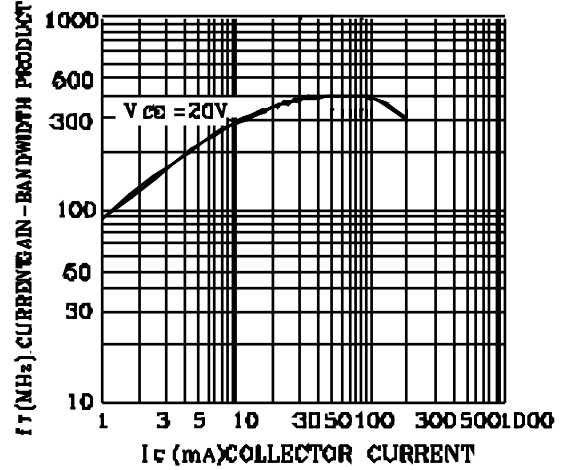
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_c=10\mu A, I_E=0$	75			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_c=10mA, I_B=0$	40			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=10\mu A, I_C=0$	5			V
Collector Cut-off Current	$I_{EBO}$	$V_{CB}=60V, I_E=0$			10	nA
Emitter Cutoff Current	$h_{FE}$	$V_{EB}=3V, I_C=0$	35			
DC Current Gain		$I_c=0.1mA, V_{CE}=10V$	50			
		$I_c=1mA, V_{CE}=10V$	75			
		$I_c=10mA, V_{CE}=10V$	100		300	
Collector-Base Saturation Voltage	$V_{CE(sat)}$	* $I_c=150mA, V_{CE}=10V$	40			
		* $I_c=500mA, V_{CE}=10V$			0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_c=150mA, I_B=15mA$			1.0	V
		$I_c=500mA, I_B=50mA$			1.2	V
Current Gain-Bandwidth Product	$f_T$	$I_c=150mA, I_B=15mA$			2.0	V
Output Capacitance	$C_{ob}$	$I_c=500mA, I_B=50mA$			8	pF
Turn On Time	$t_{on}$	$I_c=20mA, V_{ce}=20V$	300			MHz
		$f=100MHz$			35	ns
Turn Off Time	$t_{off}$	$V_{CB}=10V, I_E=0, f=1MHz$			285	ns
		$V_{ce}=30V, I_c=150mA$				
Noise Figure	NF	$I_c=20mA, V_{CE}=20V$				
		$f=100MHz$				
		$V_{cc}=30V, V_{BE}=0.5V$				
		$I_c=150mA, V_{B1}=15mA$				
		$V_{cc}=30V, I_c=150mA,$				
		$I_{B1}=I_{B2}=15mA$				

- Pulse Test: Pulse Width  $\leq 350\mu s$ , Duty Cycle  $\leq 2\%$

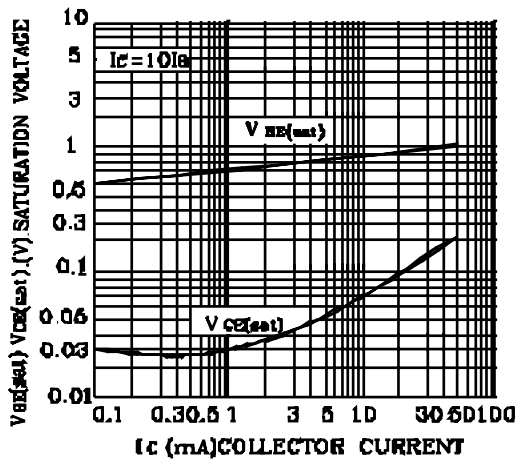
**DC CURRENT GAIN**



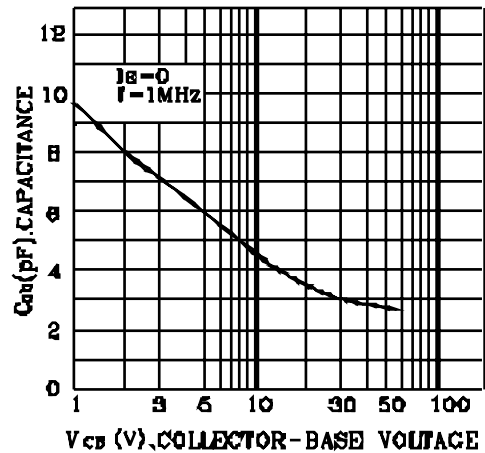
**CURRENT GAIN-BANDWIDTH PRODUCT**



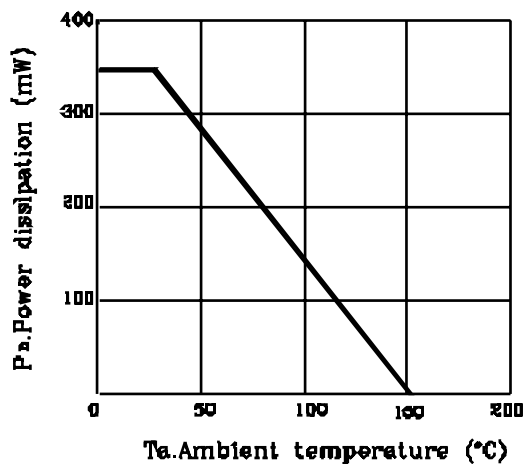
**BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE**



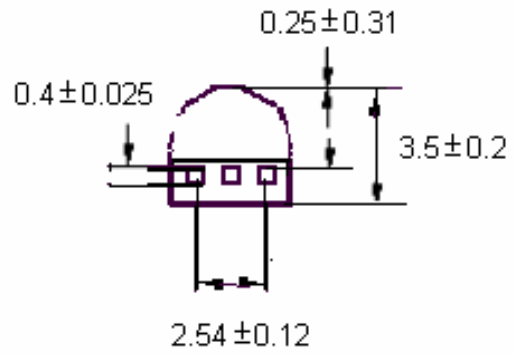
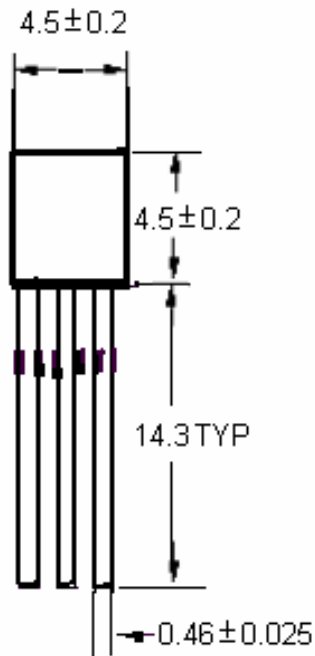
**OUTPUT CAPACITANCE**



**POWER DERATING**



**TO-92 Unit:mm**



**SOT-23 Unit:mm**

