

**NPN Epitaxial Silicon Transistor**

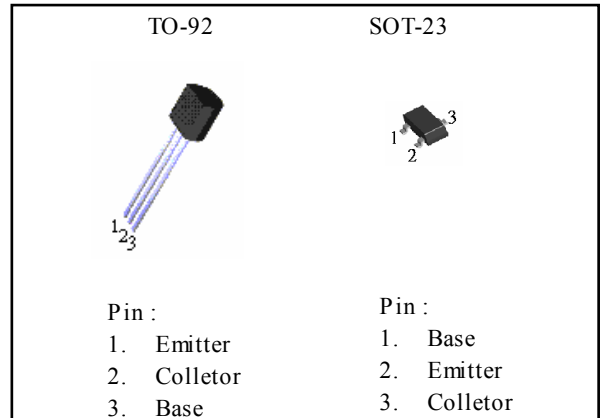
**AUDIO FREQUENCY POWER AMPLIFIER**

- MEDIUM SPEED SWITCHING

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

Characteristic	Symbol	Rating	Unit
Collector-base Voltage	V <sub>CB0</sub>	120	V
Collector-Emitter Voltage	V <sub>CEO</sub>	60	V
Emitter-base Voltage	V <sub>EBO</sub>	6	V
Collector Current (DC)	I <sub>C</sub>	0.5	A
*Collector Current (Pulse)	I <sub>C</sub>	1	A
Collector Dissipation TO-92	P <sub>D</sub>	0.75	W
SOT-23	P <sub>D</sub>	0.3	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55~150	°C

- PW ≤ 10ms, Duty Cycle ≤ 50%



**ORDERING INFORMATION**

Device	Operating Operature	Package
PJD1616CCT	-20°C ~ +85°C	TO-92
PJD1616CCX		SOT-23

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

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =60V, I <sub>E</sub> =0			100	nA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =6V, I <sub>C</sub> =0			100	nA
*DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =50mA	135		400	
	h <sub>FE2</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =0.5A	81			
**Base Emitter On Voltage	V <sub>BE (on)</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =20mA	600	640	700	mV
*Collector Emitter Saturation Voltage	V <sub>CE (sat)</sub>	I <sub>C</sub> =400mA, I <sub>B</sub> =40mA		0.15	0.3	V
*Base Emitter Saturation Voltage	V <sub>BE (sat)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA		0.9	1.2	V
Output Capacitance	C <sub>Ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz		19		pF
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =100mA	100	160		MHz
Turn On Time	ton	V <sub>CC</sub> =10V, I <sub>C</sub> =100mA		0.07		μs
Storage Time	ts	I <sub>B1</sub> = -I <sub>B2</sub> =10mA		0.95		μs
Fall Time	tf	V <sub>BE(off)</sub> = -2~-3V		0.07		μs

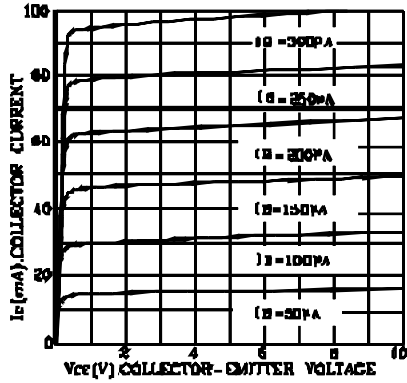
- Pulse Test: PW ≤ 350 μs, Duty Cycle ≤ 2%

**h<sub>FE</sub>(1) CLASSIFICATION**

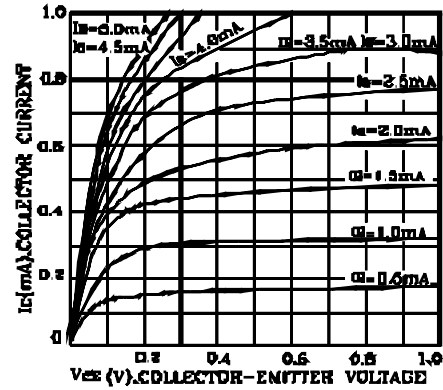
Classification	Y	G	L
h <sub>FE</sub> (1)	135-270	200-400	300-600

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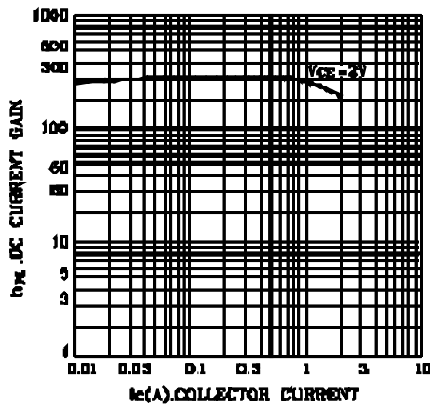
STATIC CHARACTERISTIC



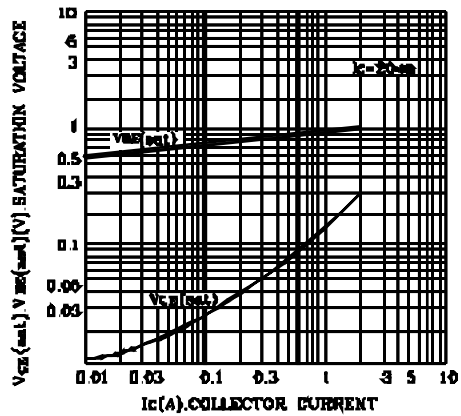
STATIC CHARACTERISTIC



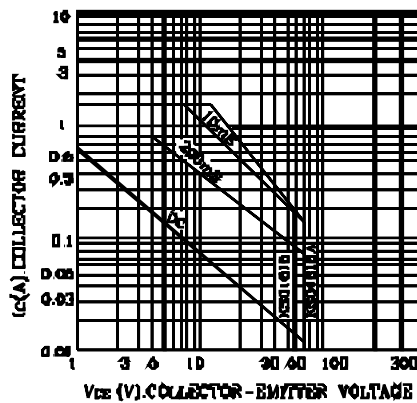
DC CURRENT GAIN VOLTAGE



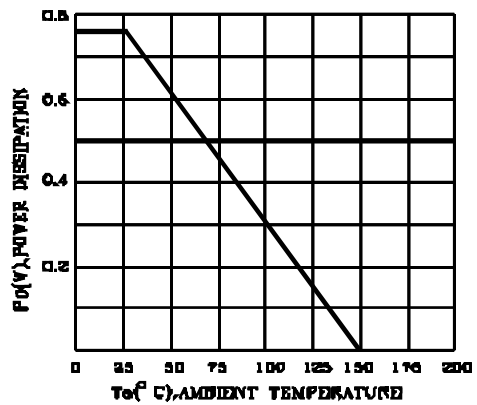
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION



SAFE OPERATING AREA

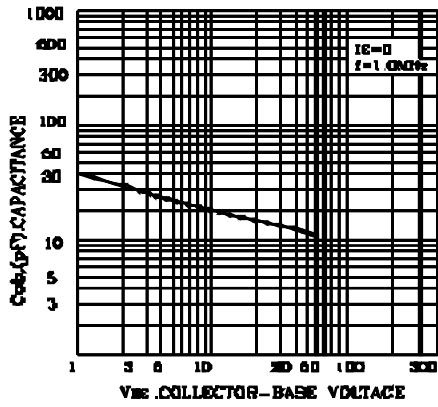


POWER DERATING

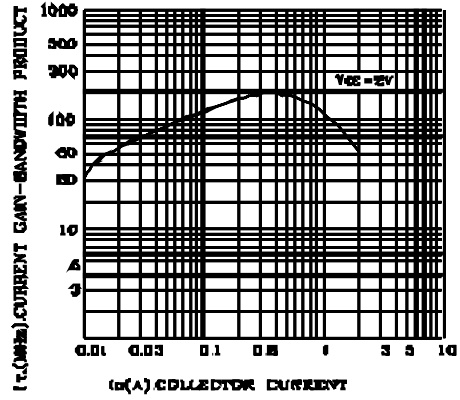


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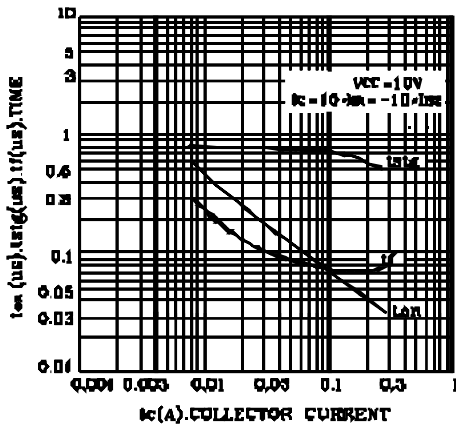
COLLECTOR OUTPUT CAPACITANCE



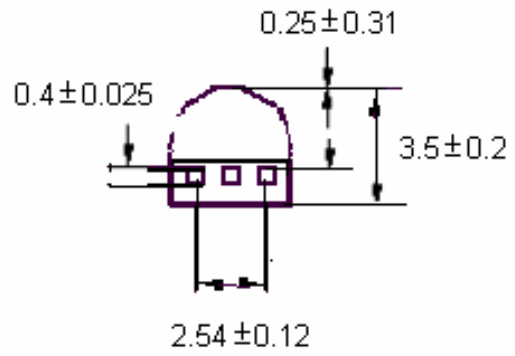
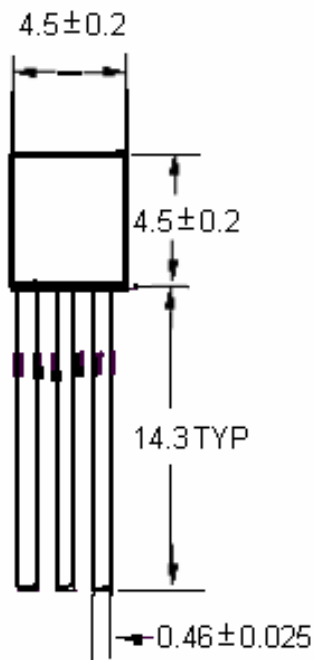
CURRENT GAIN-BANDWIDTH PRODUCT



SWITCHING TIME



**TO-92 Unit:mm**



**SOT-23 Unit:mm**

