

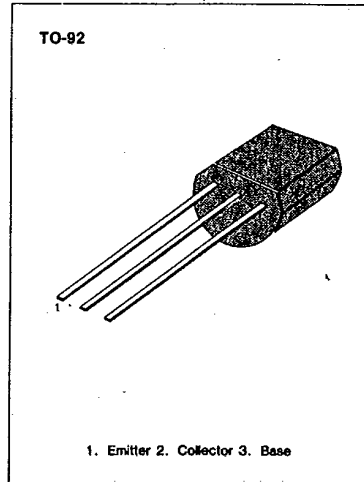
KSD1616/1616A NPN EPITAXIAL SILICON TRANSISTOR

**AUDIO FREQUENCY POWER AMPLIFIER
MEDIUM SPEED SWITCHING**

• Complement to KSB1116/1116A

ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage : KSD1616	V _{CB0}	60	V
: KSD1616A		120	V
Collector-Emitter Voltage : KSD1616	V _{CE0}	50	V
: KSD1616A		60	V
Emitter-Base Voltage	V _{EB0}	6	V
Collector Current (DC)	I _C	1	A
* Collector Current (Pulse)	I _C	2	A
Collector Dissipation	P _C	0.75	W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55~150	°C



* PW ≤ 10ms, Duty Cycle ≤ 50%

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I _{CB0}	V _{CB} = 60V, I _E = 0			100	nA
Emitter Cutoff Current	I _{EB0}	V _{EB} = 6V, I _C = 0			100	nA
* DC Current Gain : KSD1616	h _{FE1}	V _{CE} = 2V, I _C = 100mA	135		600	
: KSD1616A			135		400	
	h _{FE2}	V _{CE} = 2V, I _C = 1A	81			
* Base Emitter On Voltage	V _{BE (on)}	V _{CE} = 2V, I _C = 50mA	600	640	700	mV
* Collector Emitter Saturation Voltage	V _{CE (sat)}	I _C = 1A, I _B = 50mA		0.15	0.3	V
* Base Emitter Saturation Voltage	V _{BE (sat)}	I _C = 1A, I _B = 50mA		0.9	1.2	V
Output Capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz		19		pF
Current Gain Bandwidth Product	f _T	V _{CE} = 2V, I _C = 100mA	100	160		MHz
Turn On Time	t _{on}	V _{CC} = 10V, I _C = 100mA		0.07		μs
Storage Time	t _s	I _{B1} = -I _{B2} = 10mA		0.95		μs
Fall Time	t _f	V _{BE (off)} = -2~3V		0.07		μs

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

h_{FE}(1) CLASSIFICATION

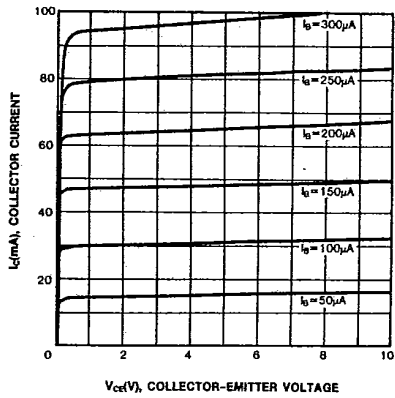
Classification	Y	G	L
h _{FE} (1)	135-270	200-400	300-600

KSD1616/1616A

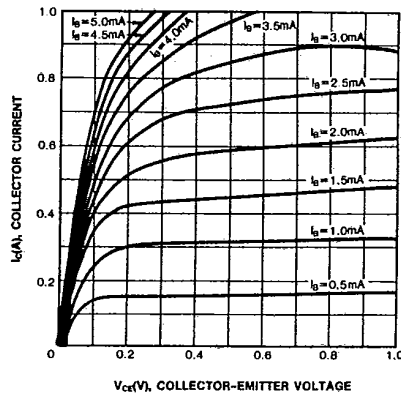
NPN EPITAXIAL SILICON TRANSISTOR

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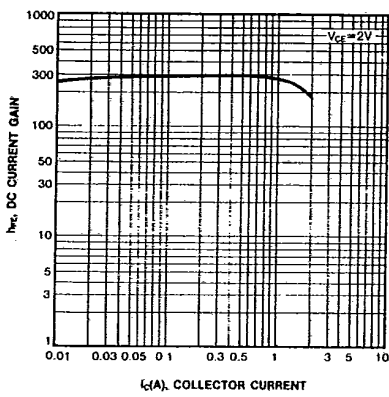
STATIC CHARACTERISTIC



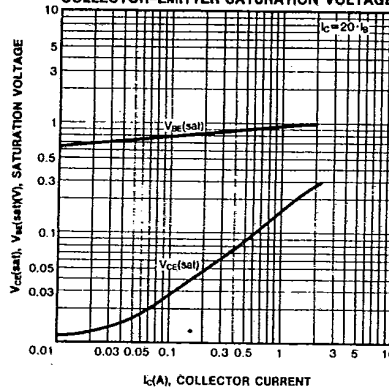
STATIC CHARACTERISTIC



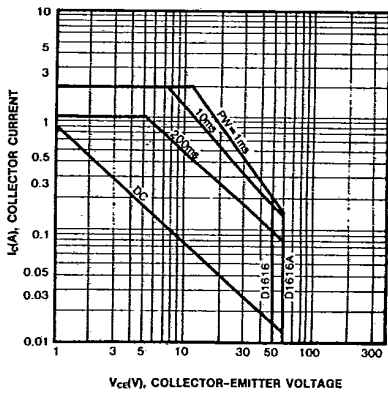
DC CURRENT GAIN



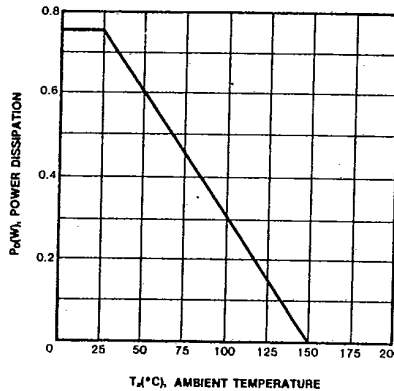
BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



SAFE OPERATING AREA



POWER DERATING



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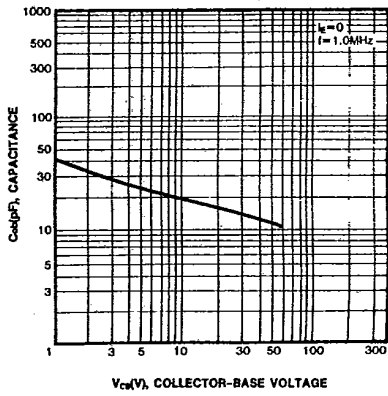


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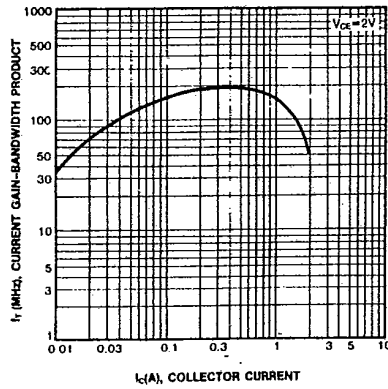
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COLLECTOR OUTPUT CAPACITANCE



CURRENT GAIN-BANDWIDTH PRODUCT



SWITCHING TIME

