

AUDIO FREQUENCY POWER AMPLIFIER MEDIUM SPEED SWITCHING

- Complement to KSD1616/1616A

ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

Characteristic	Symbol	Rating	Unit	
Collector-base Voltage	:KSD1616 :KSD1616A	V _{CBO}	60	V
			120	V
Collector-Emitter Voltage	:KSD1616 :KSD1616A	V _{CEO}	50	V
			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

TO-92



SOT-23



I 1. Emitter 2. Base 3. Collector
II 1. Emitter 2. Collector 3. Base

- PW ≤ 10ms, Duty Cycle ≤ 50%

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

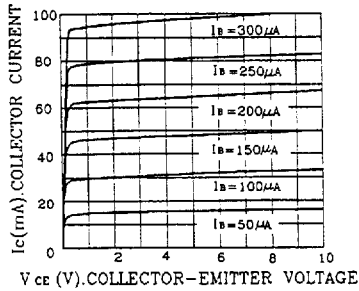
Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I _{CBO}	V _{CB} =60V, I _E =0			100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} =6V, I _C =0			100	nA
*DC Current Gain :KSD1616 :KSD1616A	h _{FE1}	V _{CE} =2V, I _C =100mA	135		600	
			135		400	
**Base Emitter On Voltage	V _{BE (on)}	V _{CE} =2V, I _C =1A	81			
			600	640	700	mV
*Collector Emitter Saturation Voltage	V _{CE (sat)}	V _{CE} =2V, I _C =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 ≤ 350 μs, Duty Cycle ≤ 2%

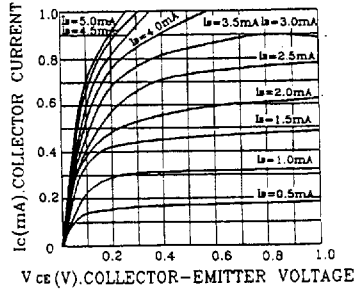
h_{FE}(1) CLASSIFICATION

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

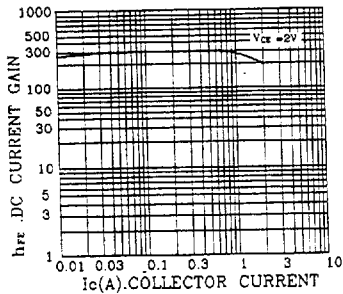
STATIC CHARACTERISTIC



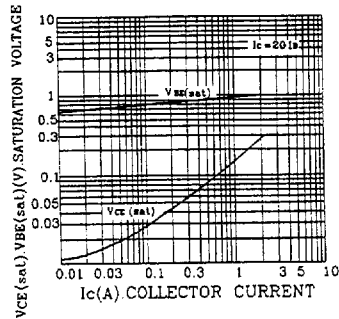
STATIC CHARACTERISTIC



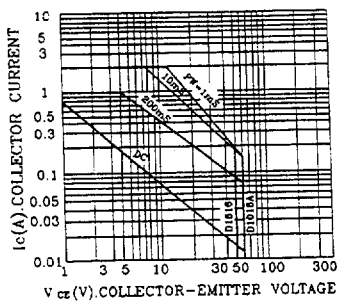
DC CURRENT GAIN



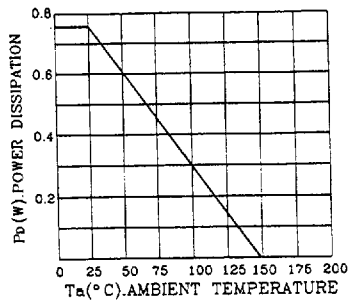
BASE-EMITTER SATURATION VOLTAGE COLLECTOR-EMITTER SATURATION VOLTAGE



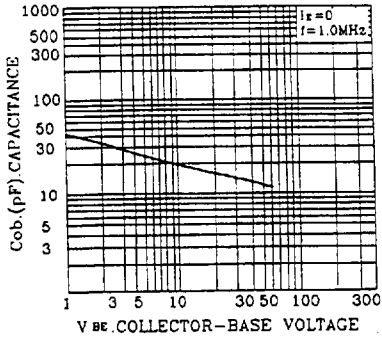
SAFE OPERATING AREA



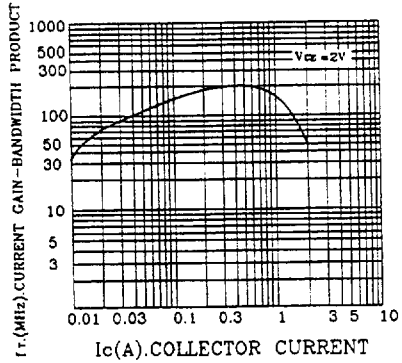
POWER DERATING



COLLECTOR OUTPUT CAPACITANCE



CURRENT GAIN-BANDWIDTH PRODUCT



SWITCHING TIME

