



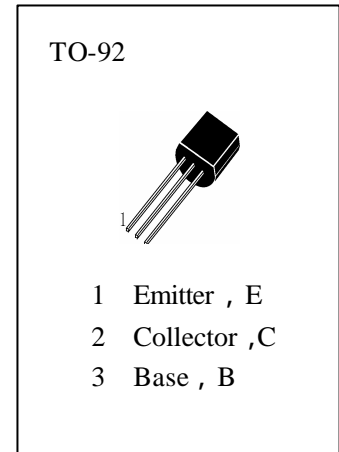
# H1616

## APPLICATIONS

Audio frequency power Aamplifier& Medium  
Speed switching Low frequency power amplifier.

### ABSOLUTE MAXIMUM RATINGS ( $T_a=25$ )

$T_{stg}$	—Storage Temperature.....	-55~150
$T_j$	—Junction Temperature.....	150
$P_C$	—Collector Dissipation.....	750mW
$V_{CBO}$	—Collector-Base Voltage.....	60V
$V_{CEO}$	—Collector-Emitter Voltage.....	50V
$V_{EBO}$	—Emitter-Base Voltage.....	6V
$I_C$	—Collector Current.....	1A
$I_{CP}$	—Collector Current ( <u>Pulse</u> ) .....	2A



### ELECTRICAL CHARACTERISTICS ( $T_a=25$ )

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BVCBO	Collector-Base Breakdown Voltage	60			V	$I_C=10\mu A, I_E=0$
BVCEO	Collector-Emitter Breakdown Voltage	50			V	$I_C=1mA, I_B=0$
BVEBO	Emitter-Base Breakdown Voltage	6			V	$I_E=10\mu A, I_C=0$
ICBO	Collector Cut-off Current			100	nA	$V_{CB}=60V, I_E=0$
IEBO	Emitter Cut-off Current			100	nA	$V_{EB}=6V, I_C=0$
$H_{FE}(1)$	DC Current Gain	135		600		$V_{CE}=2V, I_C=100mA$
$H_{FE}(2)$	DC Current Gain	81				$V_{CE}=2V, I_C=1A$
$V_{CE(sat)}$	Collector- Emitter Saturation Voltage		0.15	0.3	V	$I_C=1A, I_B=50mA$
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		0.9	1.2	V	$I_C=1A, I_B=50mA$
$V_{BE(on)}$	Base-Emitter On Voltage	600	640	700	mV	$V_{CE}=2V, I_C=50mA$
ft	Current Gain-Bandwidth Product	100	160		MHz	$V_{CE}=2V, I_C=100mA$
Cob	Output Capacitance		19		pF	$V_{CB}=10V, I_E=0, f=1MHz$

### $h_{FE}$ Classification

Y	G	L
135—270	200—400	300—600

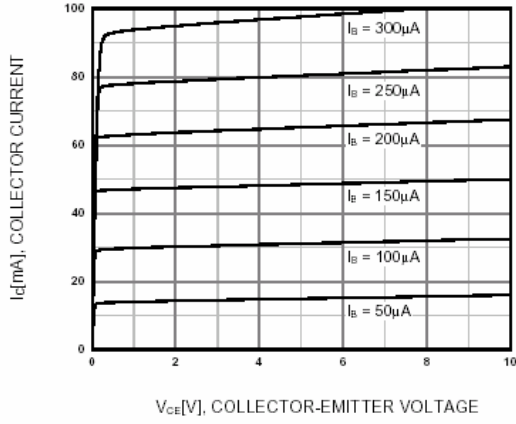


Figure 1. Static Characteristic

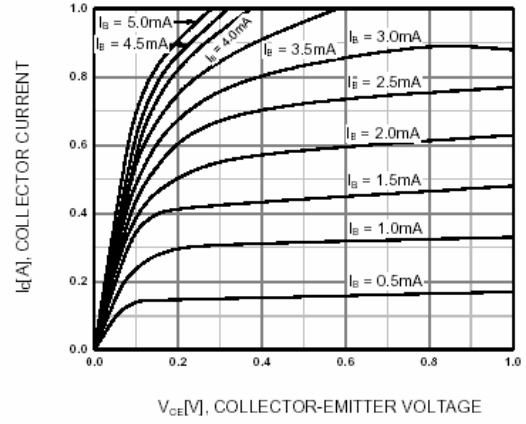


Figure 2. Static Characteristic

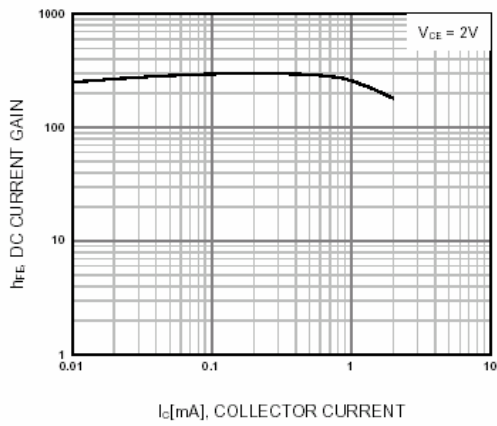


Figure 3. DC current Gain

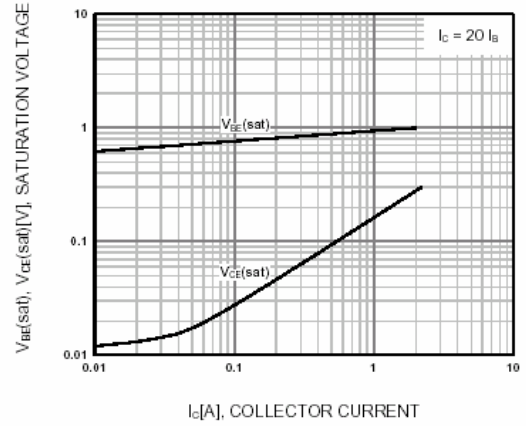


Figure 4. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

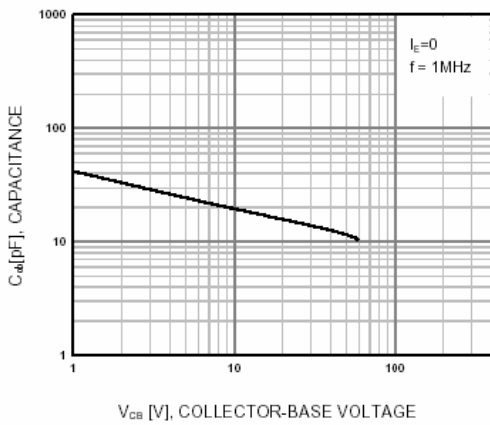


Figure 5. Collector Output Capacitance

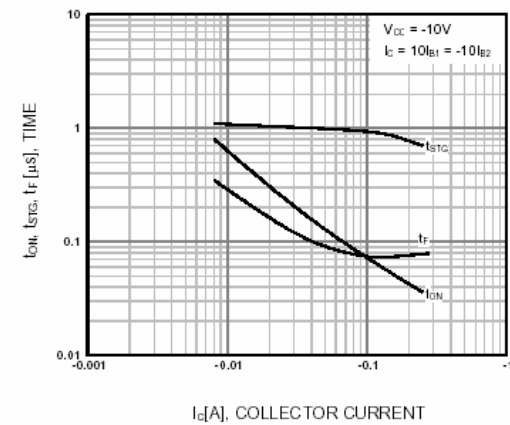


Figure 6. Switching Time

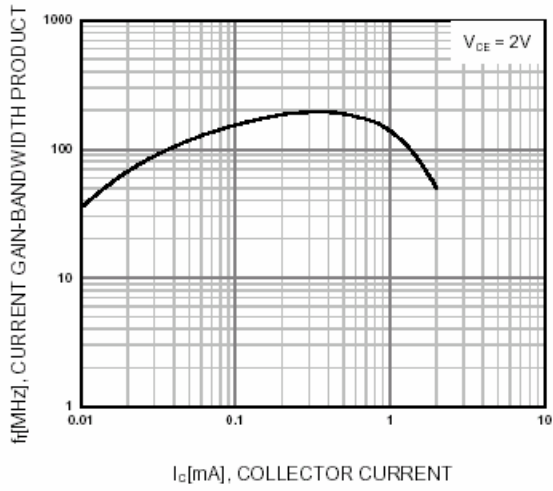


Figure 7. Current Gain Bandwidth Product

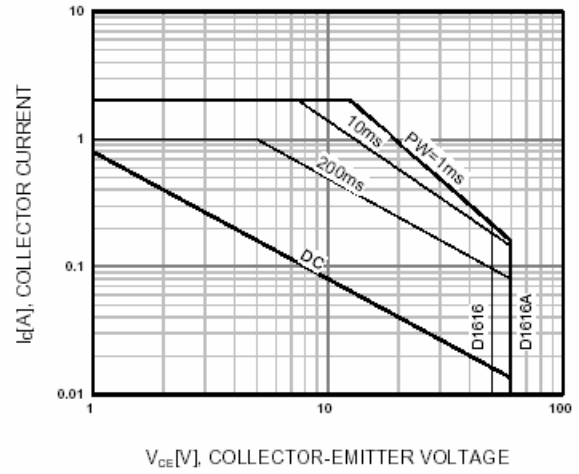


Figure 8. Safe Operating Area

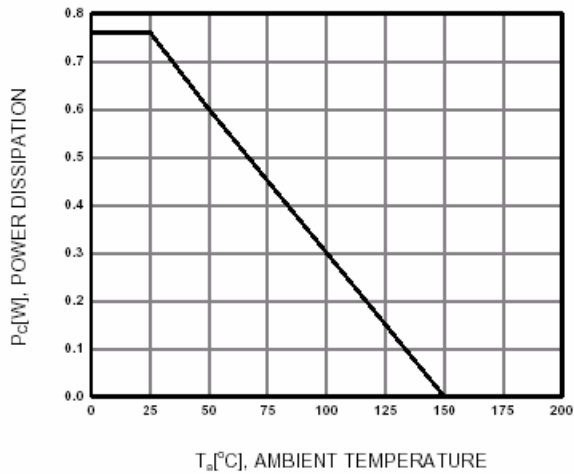


Figure 9. Power Derating