

Features

- Audio Frequency Power Amplifier & Medium Speed Switching
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

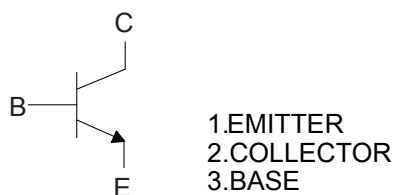
Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 166.7°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	50	V
		60	
Collector-Emitter Voltage	V_{CEO}	60	V
		120	
Emitter-Base Voltage	V_{EBO}	6	V
Continuous Collector Current	I_C	1	A
Peak Collector Current	I_{CM}	2	A
Collector Power Dissipation	P_C	0.75	W

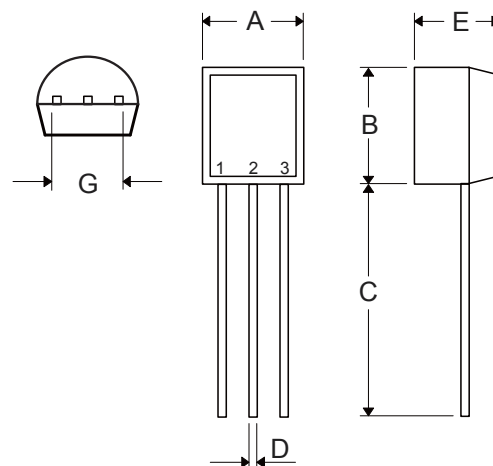
Marking:D1616 X

Internal Structure



NPN Silicon Epitaxial Transistors

TO-92



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.169	0.185	4.30	4.70	
B	0.169	0.185	4.30	4.70	
C	0.500	-----	12.70	-----	
D	0.015	0.022	0.38	0.55	
E	0.130	0.146	3.30	3.70	
G	0.095	0.105	2.42	2.67	Straight Lead
	0.173	0.220	4.40	5.60	Bent

Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector Cut-off Current	I_{CBO}			100	nA	$V_{CB}=60\text{V}$, $I_E=0$
Emitter Cutoff Current	I_{EBO}			100	nA	$V_{EB}=6\text{V}$, $I_C=0$
DC Current Gain	$h_{FE(1)}$	135			600	$V_{CE}=2\text{V}$, $I_C=100\text{mA}$
KSD1616A		135			400	
DC Current Gain	$h_{FE(2)}$	81				$V_{CE}=2\text{V}$, $I_C=1\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.15	0.3	V	$I_C=1\text{A}$, $I_B=50\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.9	1.2	V	$I_C=1.5\text{A}$, $I_B=75\text{mA}$
Base-Emitter On Voltage	$V_{BE(on)}$	0.6	0.64	0.7	V	$V_{CE}=2\text{V}$, $I_C=50\text{mA}$
Transition Frequency	f_T	100	160		MHz	$V_{CE}=2\text{V}$, $I_C=100\text{mA}$
Turn On Time	t_{ON}		70		ns	$V_{CC}=10\text{V}$, $V_{BE(OFF)}=-2\sim-3\text{V}$, $I_C=100\text{mA}$, $I_{B1}=I_{B2}=10\text{mA}$
Storage Time	t_{STG}		950		ns	
Fall Time	t_F		70		ns	
Output Capacitance	C_{ob}		19		pF	$V_{CE}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$

Classification of $h_{FE(1)}$

Rank	Y	G	L
Range	135-270	200-400	300-600

Curve Characteristics

Fig. 1 - Static Characteristics

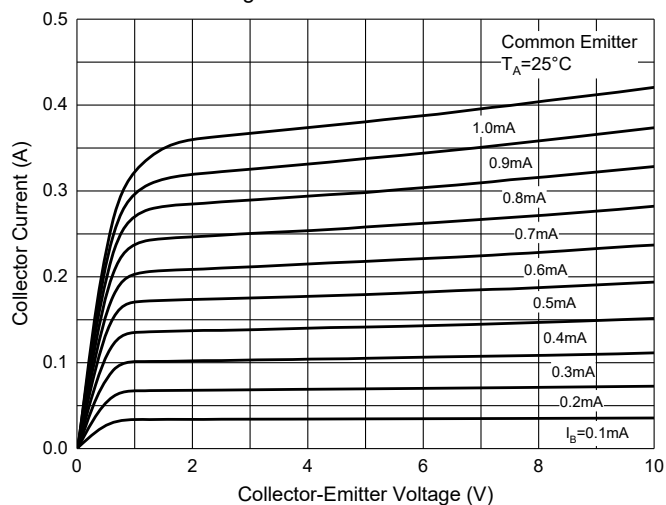


Fig. 2 - DC Current Gain Characteristics

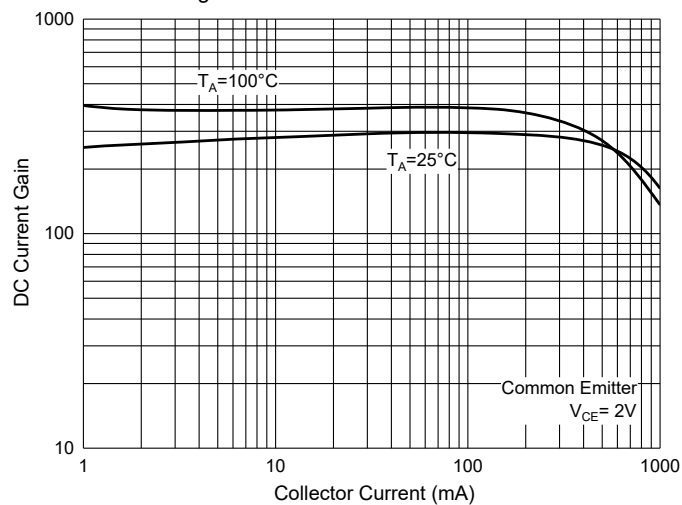


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

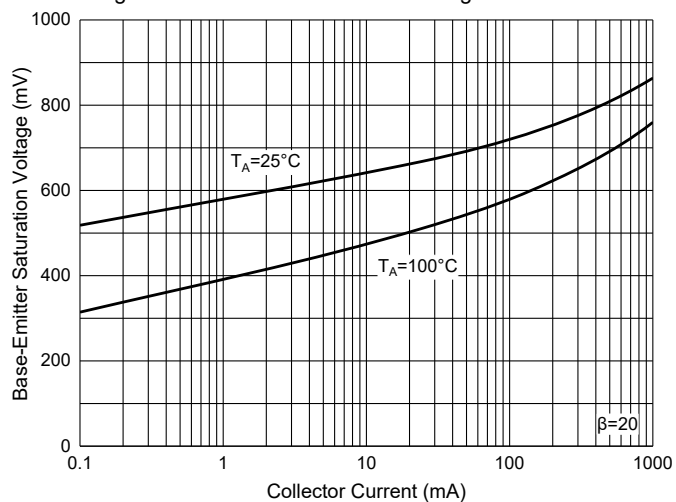


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

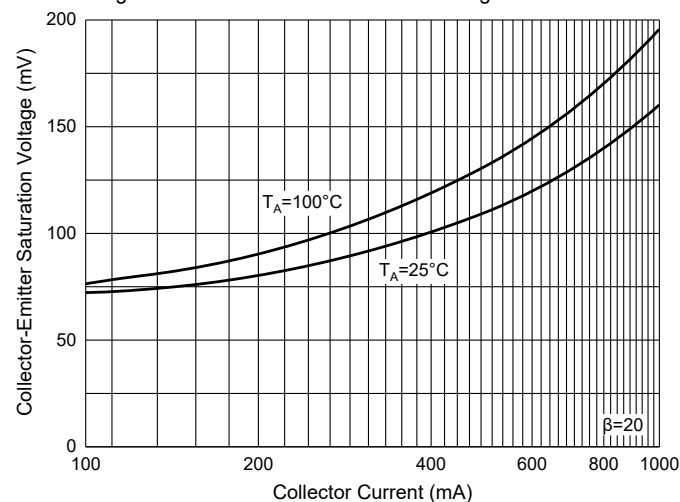


Fig. 5 - Base-Emitter Voltage Characteristics

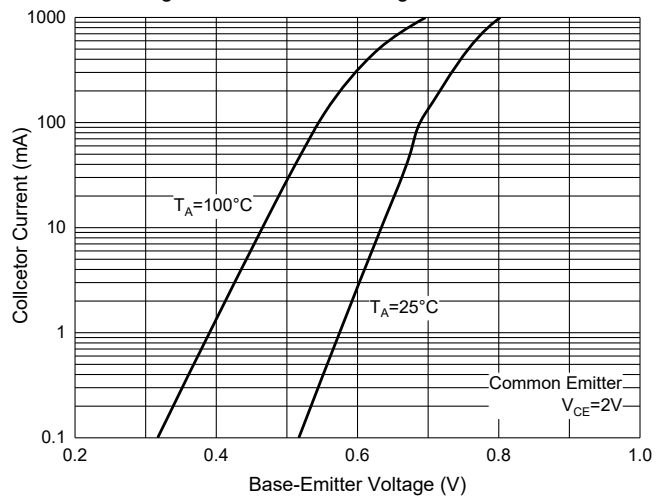
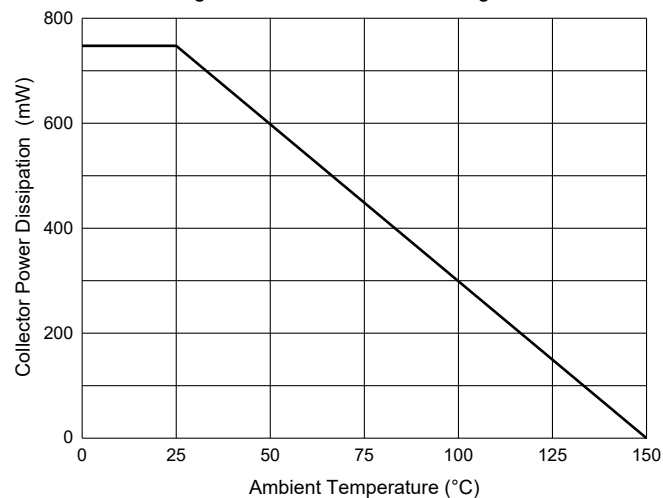


Fig. 6 - Collector Power Derating Curve



Ordering Information

Device	Packing
Part Number-AP	Ammo Packing: 20Kpcs/Carton
Part Number-BP	Bulk: 1k/Bag, 100K/Ctn;

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-AP-HF

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