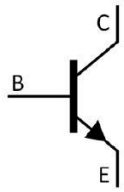
TO-220 NPN Silicon NPN transistor in a TO-220 Plastic Package.

Low Current Low Voltage.

Low frequency power amplifier applications.



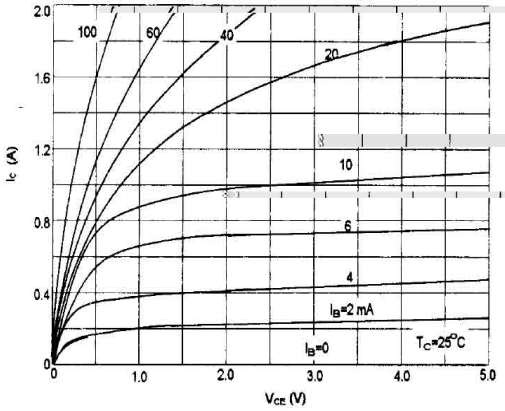
PIN1 Base PIN 2 Collector PIN 3 Emitter

h_{FE} Classifications Symbol	C	D	E	F
h_{FE} Range	40 80	60 120	100 200	160 320

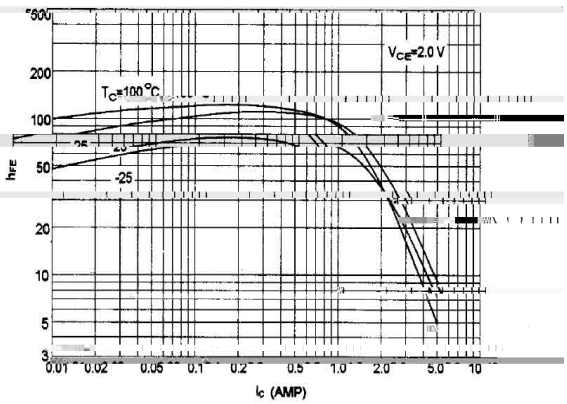
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	60	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous	I_C	3.0	A
Base Current - Continuous	I_{CP}	8.0	A
Collector Power Dissipation	P_C	1.75	W
	$P_C(T_C=25$)	30	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	V_{CB}=20V I_E=0			0.1	mA
Collector Cut-Off Current	I_{CEO}	V_{CE}=60V R_{BE}=∞			5.0	mA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=4.0V I_C=0			1.0	mA
DC Current Gain	$h_{FE(1)}$	V_{CE}=2.0V I_C=1.0A	40		320	
	$h_{FE(2)}$	V_{CE}=2.0V I_C=0.1A	40			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=2.0A I_B=0.2A		0.4	1.0	V
Base to Emitter Voltage	V_{BE}	V_{CE}=2.0V I_C=1.0A			1.5	V
Transition Frequency	f_T	V_{CE}=5.0V I_C=0.5A		8.0		MHz
Turn-On Time	C_{ob}	V_{CB}=10V f=1.0MHz		65		pF

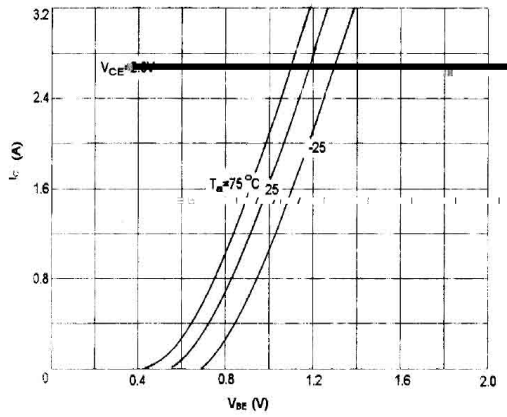
Ic - Vce



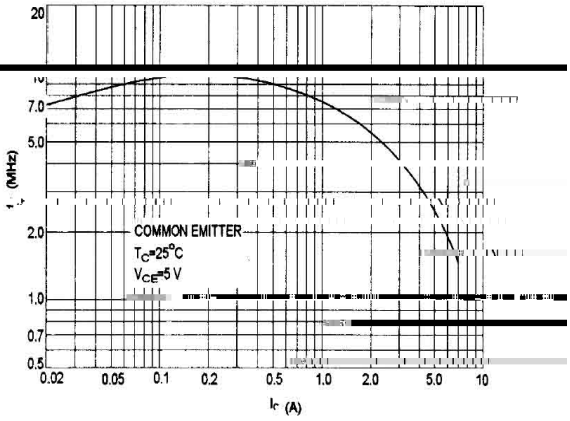
Ic-hFE



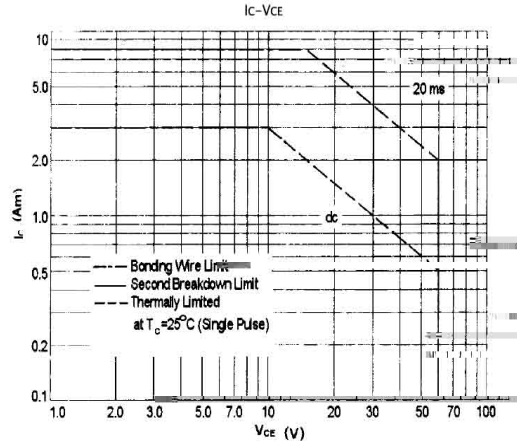
Ic - Vbe



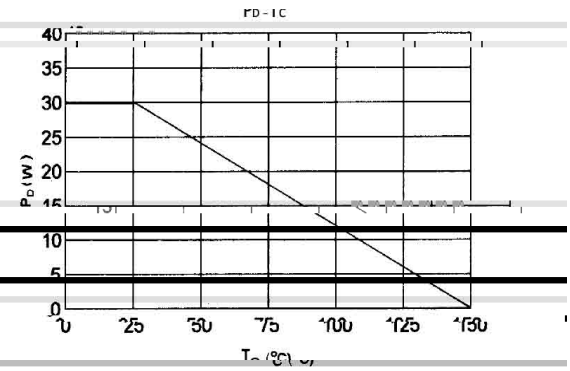
f_T - Ic

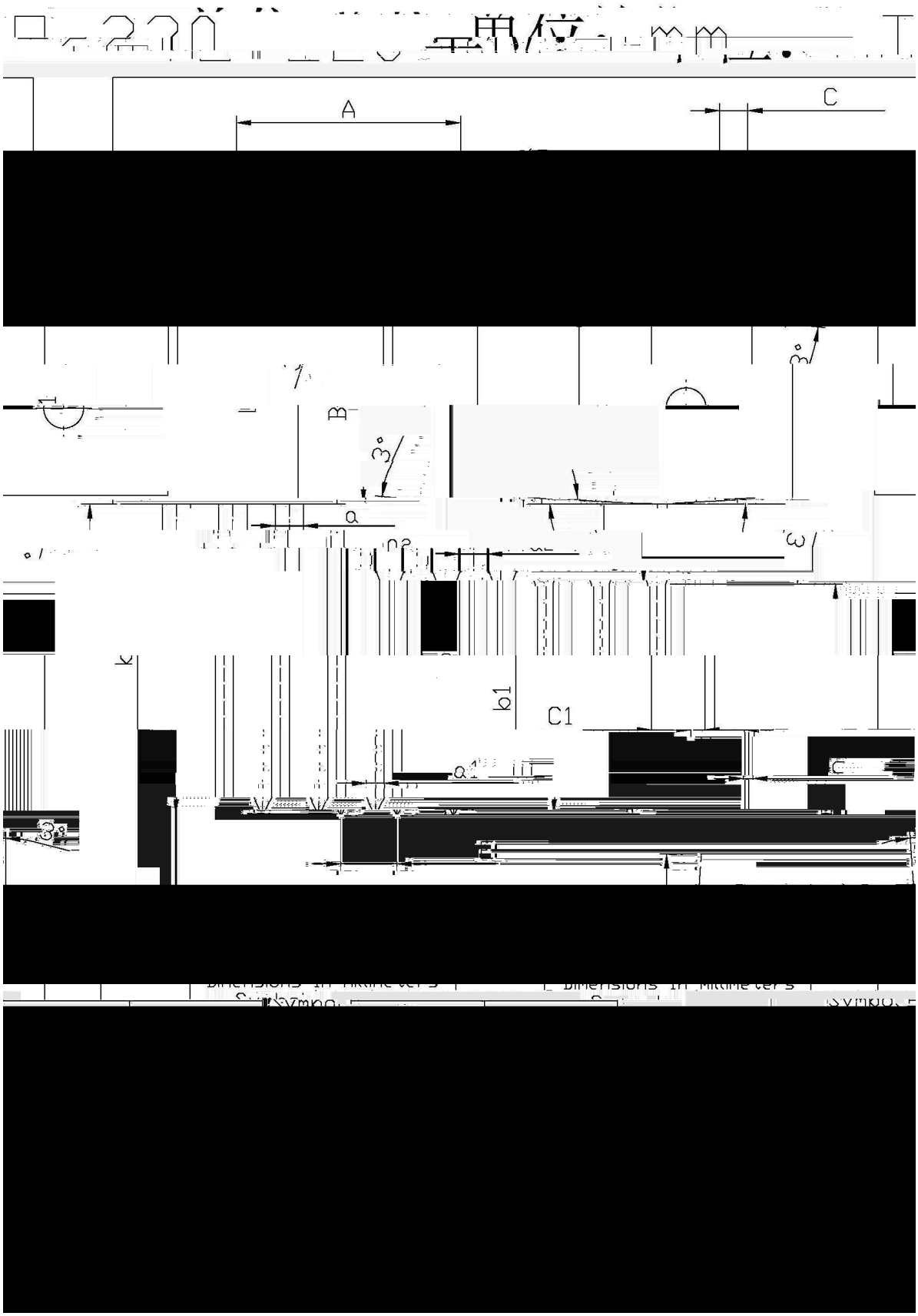


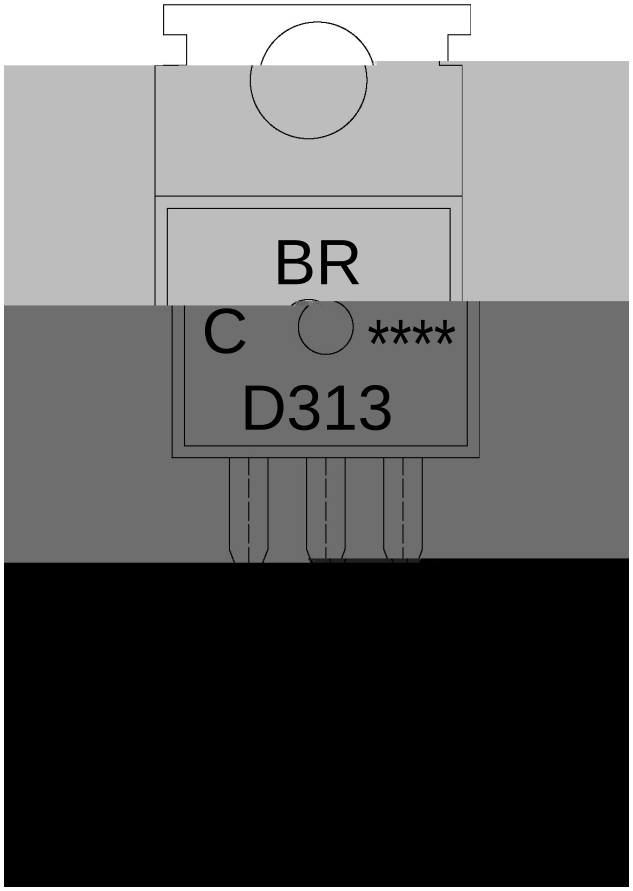
Ic-VCE



PD-TC




A
C
B
a
b1
C1



BR

D313

C: h_{FE}

****

Note:

BR:	Company Code
D313:	Product Type.
C:	h_{FE} Classifications Symbol
****:	Lot No. Code, code change with Lot No.