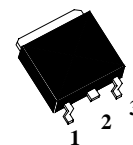


NPN PLASTIC ENCAPSULATE TRANSISTORS

 Lead(Pb)-Free

1.BASE
2.COLLECTOR
3.EMITTER



D-PAK(TO-252)

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Units
Collector-Base Voltage	V_{CB0}	60	V
Collector-Emitter Voltage	V_{CE0}	60	V
Emitter-Base Voltage	V_{EB0}	7	V
Collector Current -Continuous	I_C	3	A
Collector Power Dissipation	P_C	1	W
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55-150	$^{\circ}\text{C}$

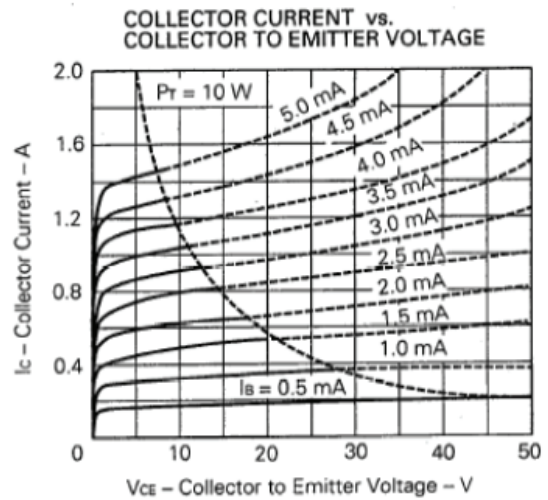
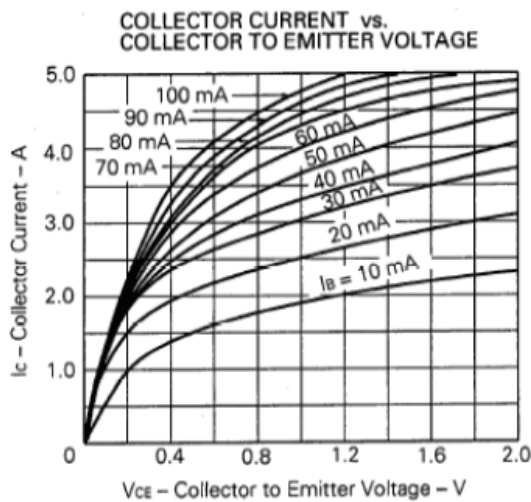
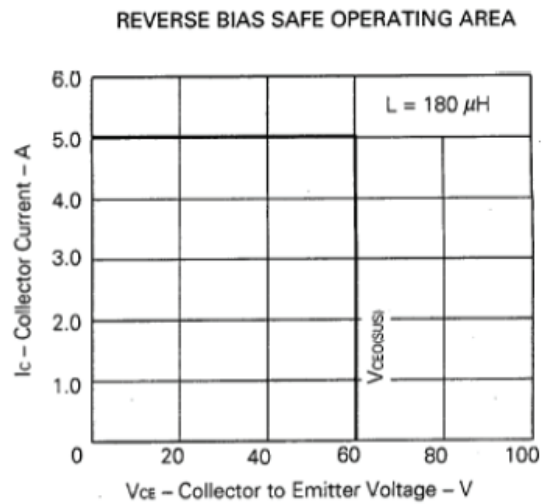
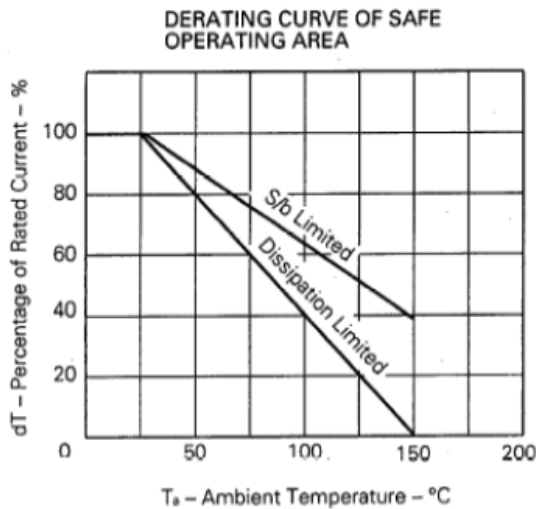
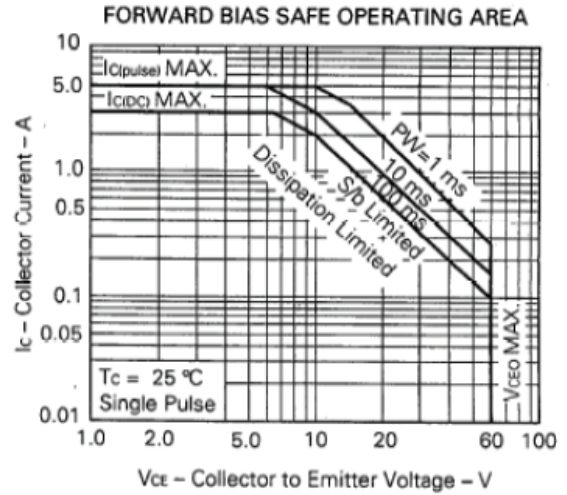
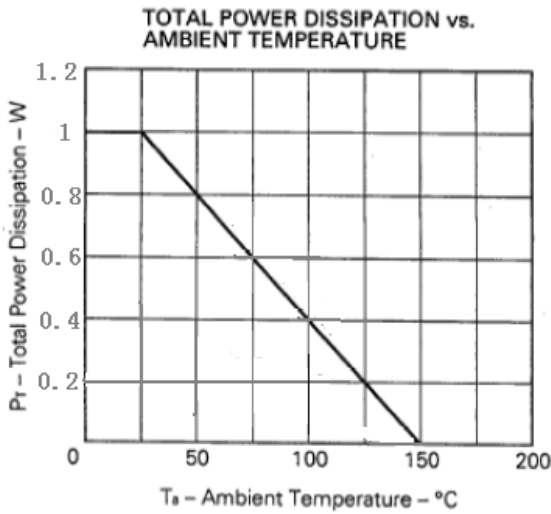
ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	60	-	-	V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	60	-	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	7	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB}=60\text{V}, I_E=0$	-	-	10	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=7\text{V}, I_C=0$	-	-	10	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=2\text{V}, I_C=200\text{mA}$	60	-	-	
	$h_{FE(2)}$	$V_{CE}=2\text{V}, I_C=600\text{mA}$	100	-	400	
	$h_{FE(3)}$	$V_{CE}=2\text{V}, I_C=2\text{A}$	50	-	-	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=1.5\text{A}, I_B=150\text{mA}$	-	-	0.25	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=1.5\text{A}, I_B=150\text{mA}$	-	-	1.2	V
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=1.5\text{A}$	-	120	-	MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	-	30	-	pF
Switching Time	Turn on Time	t_{on}	-	-	0.5	μs
	Storage Time	t_{stg}	-	-	2.0	
	Fall Time	t_f	-	-	0.5	

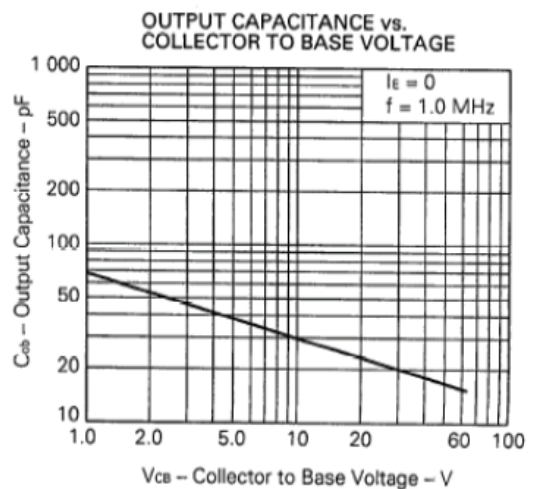
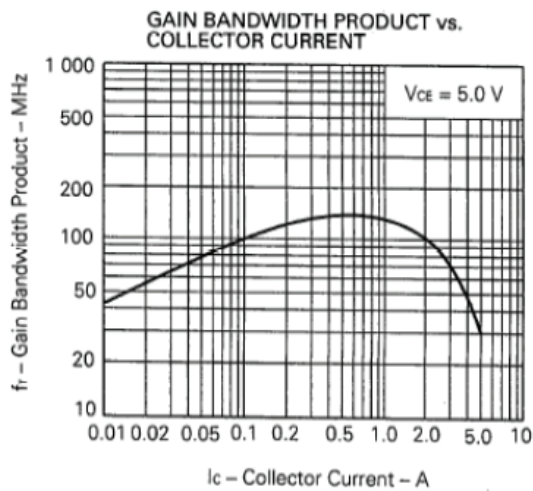
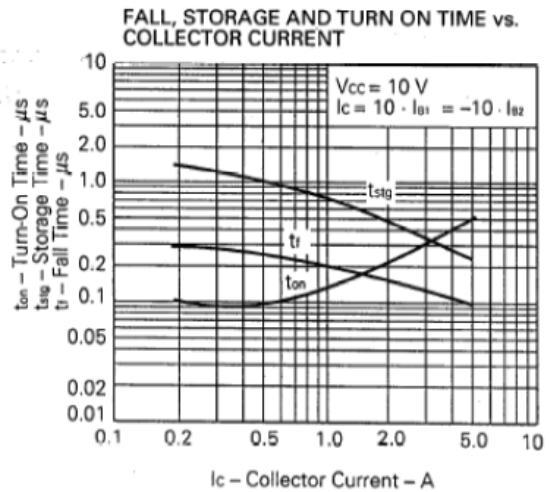
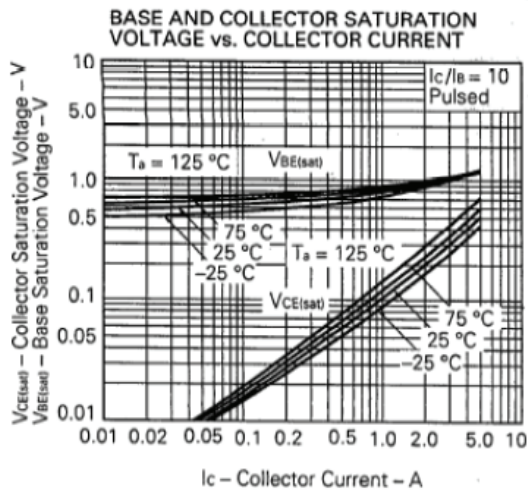
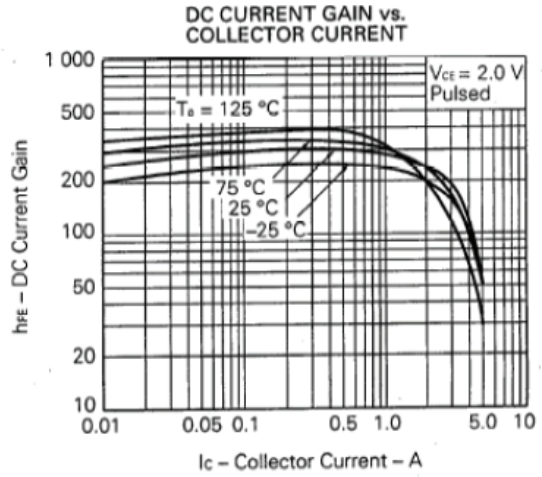
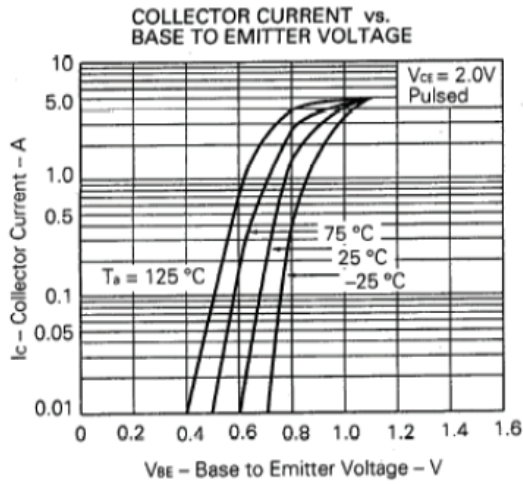
CLASSIFICATION OF $h_{FE(2)}$

Rank	M	L	K
Range	100-200	160-320	200-400

Typical Characteristics

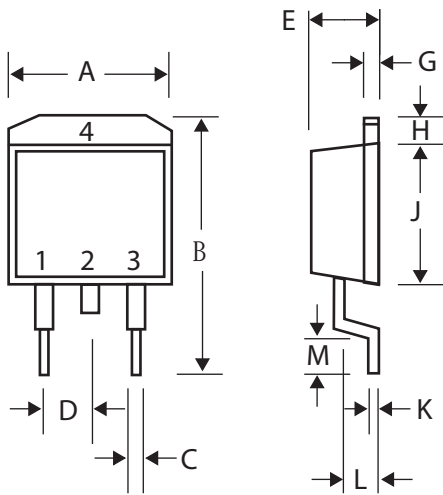


Typical Characteristics



TO-252 Outline Dimensions

unit:mm



TO-252		
Dim	Min	Max
A	6.40	6.80
B	9.00	10.00
C	0.50	0.80
D	-	2.30
E	2.20	2.50
G	0.45	0.55
H	1.00	1.60
J	5.40	5.80
K	0.30	0.64
L	0.70	1.70
M	0.90	1.50