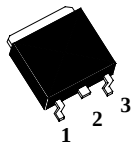
WEITRON

2SD1899

NPN PLASTIC ENCAPSULATE TRANSISTORS

Lead(Pb)-Free

1.BASE
2.COLLECTOR
3.EMITTER



D-PAK(TO-252)

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Units
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current -Continuous	I_C	3	A
Collector Power Dissipation	P_C	1	W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

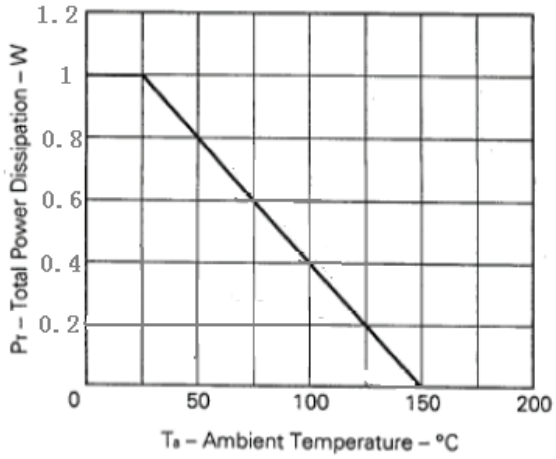
Parameter		Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage		$V_{(BR)CBO}$	I_C=100μA,I_E=0	60	-	-	V
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	I_C =1mA,I_B=0	60	-	-	V
Emitter-base breakdown voltage		$V_{(BR)EBO}$	I_E=100μA,I_C=0	7	-	-	V
Collector cut-off current		I_{CBO}	V_{CB}=60V,I_E=0	-	-	10	μA
Emitter cut-off current		I_{EBO}	V_{EB}=7V,I_C=0	-	-	10	μA
DC current gain		$h_{FE(1)}$	V_{CE}=2V,I_C=200mA	60	-	-	
		$h_{FE(2)}$	V_{CE}=2V,I_C=600mA	100	-	400	
		$h_{FE(3)}$	V_{CE}=2V,I_C=2A	50	-	-	
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=1.5A,I_B=150mA	-	-	0.25	V
Base-emitter saturation voltage		$V_{BE(sat)}$	I_C=1.5A,I_B=150mA	-	-	1.2	V
Transition frequency		f_T	V_{CE}=5V,I_C=1.5A	-	120	-	MHz
Collector output capacitance		C_{ob}	V_{CB}=10V,I_E=0,f=1MHz	-	30	-	pF
Switching Time	**Turn on Time**	t_{on}	V_{CC}=10V,I_C=1A,I_{B1}=-I_{B2}=-0.1A	-	-	0.5	μs
	Storage Time	t_{stg}		-	-	2.0	
	Fall Time	t_f		-	-	0.5	

CLASSIFICATION OF $h_{FE(2)}$

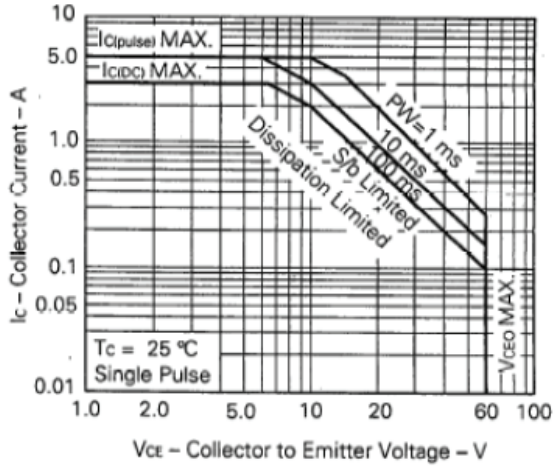
Rank	M	L	K
Range	100-200	160-320	200-400

Typical Characteristics

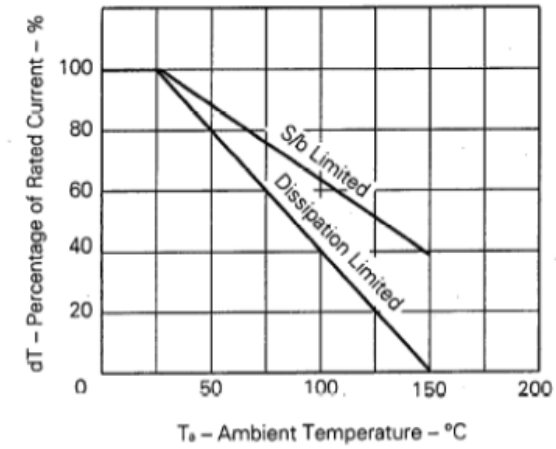
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



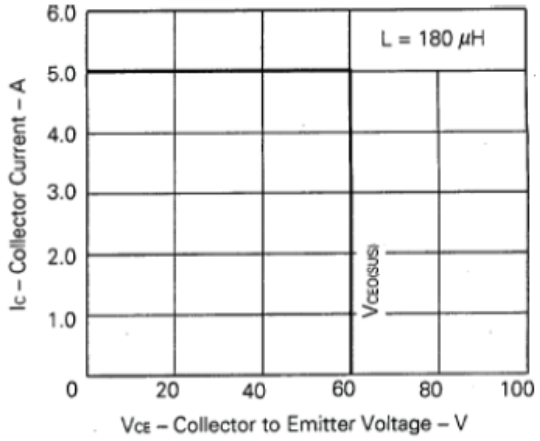
FORWARD BIAS SAFE OPERATING AREA



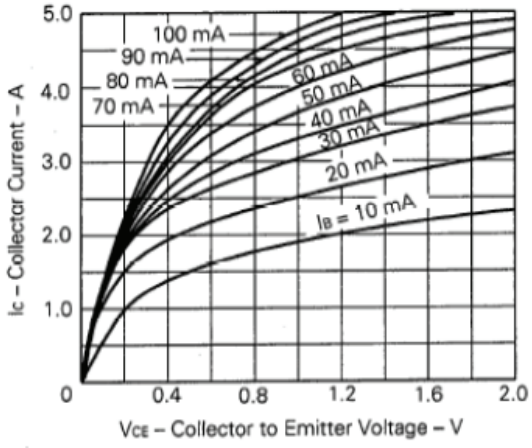
DERATING CURVE OF SAFE OPERATING AREA



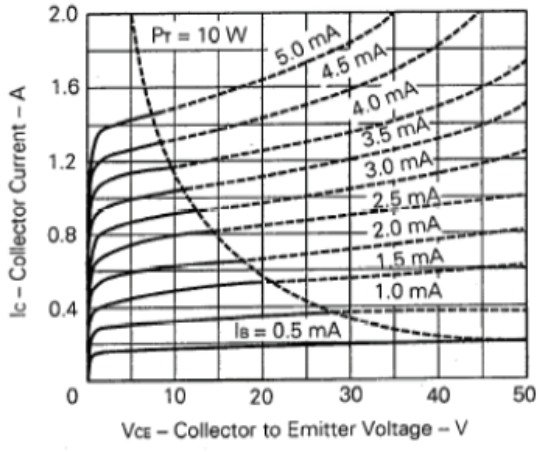
REVERSE BIAS SAFE OPERATING AREA



COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE

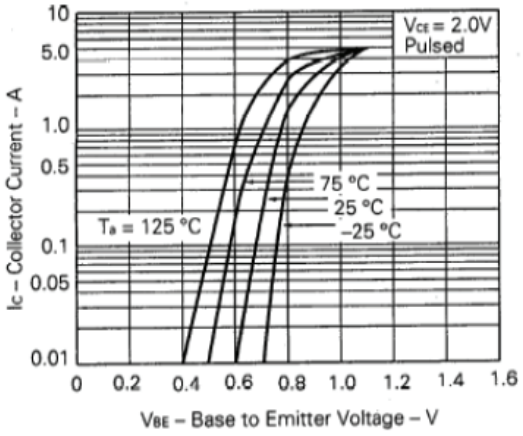


COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE

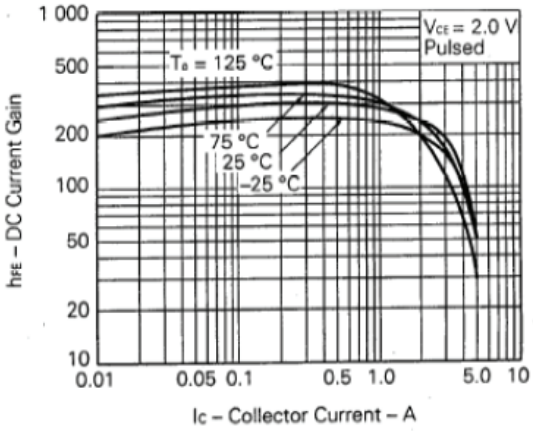


Typical Characteristics

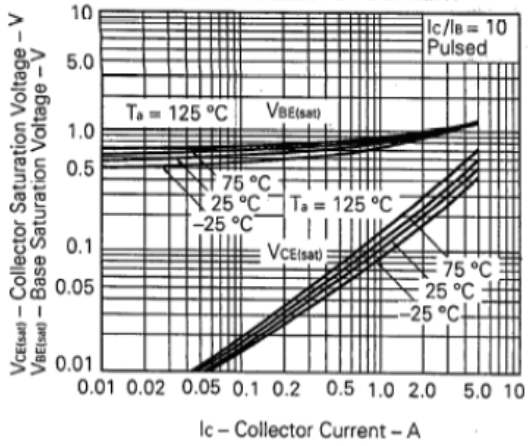
COLLECTOR CURRENT vs.
BASE TO EMITTER VOLTAGE



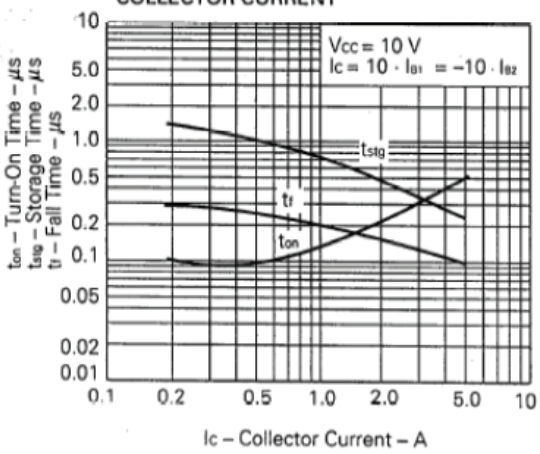
DC CURRENT GAIN vs.
COLLECTOR CURRENT



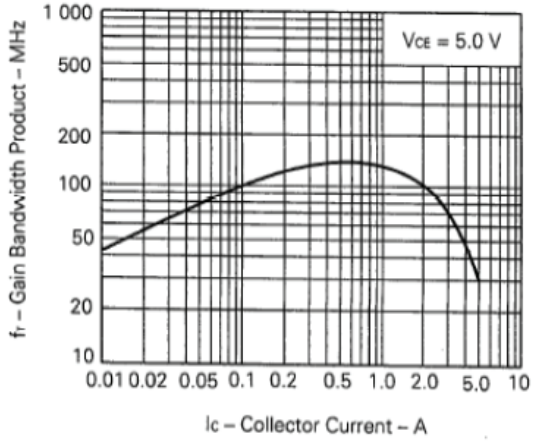
BASE AND COLLECTOR SATURATION
VOLTAGE vs. COLLECTOR CURRENT



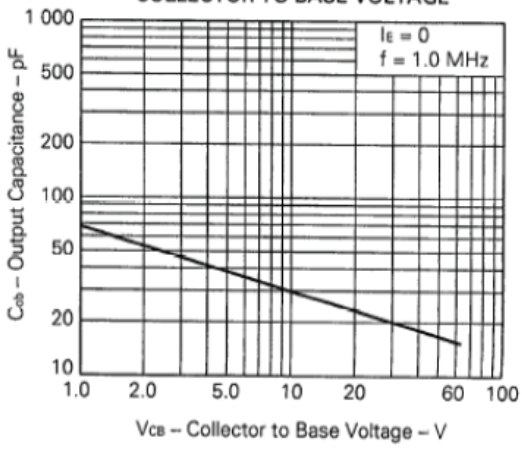
FALL, STORAGE AND TURN ON TIME vs.
COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs.
COLLECTOR CURRENT

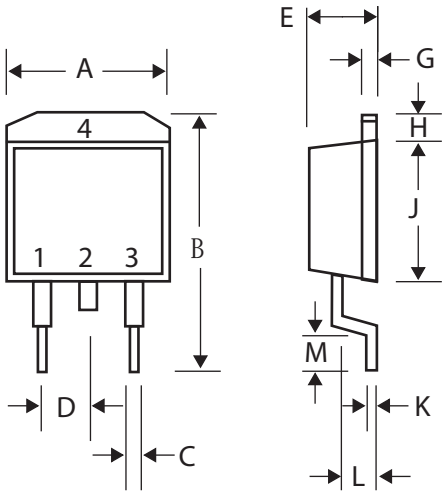


OUTPUT CAPACITANCE vs.
COLLECTOR TO BASE VOLTAGE



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