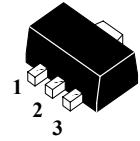


NPN EPITAXIAL PLANAR TRANSISTOR

 Lead(Pb)-Free

1. BASE
2. COLLECTOR
3. EMITTER


SOT-89
MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Units
Collector-Base Voltage	V _{CB0}	40	V
Collector-Emitter Voltage	V _{CEO}	32	V
Emitter-Base Voltage	V _{EBO}	5.0	V
Collector Current -Continuous	I _C	2.0	A
Collector Power dissipation	P _C	500	mW
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55-150	°C

ELECTRICAL CHARACTERISTICS (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =50μA, I _E =0	40			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	32			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =50μA, I _C =0	5			V
Collector cut-off current	I _{CBO}	V _{CB} =20V, I _E =0			1	μA
Emitter cut-off current	I _{EBO}	V _{EB} =4V, I _C =0			1	μA
DC current gain	h _{FE(1)}	V _{CE} =3V, I _C =500mA	82		390	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =2A, I _B =0.2A			0.8	V
Transition frequency	f _T	V _{CE} =5V, I _C =50mA, f=100MHz		100		MHz
Collector output capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz		30		pF

CLASSIFICATION OF h_{FE(1)}

Rank	P	Q	R
Range	82-180	120-270	180-390
Marking	DBP	DBQ	DBR

WTM1766



Typical Characteristics

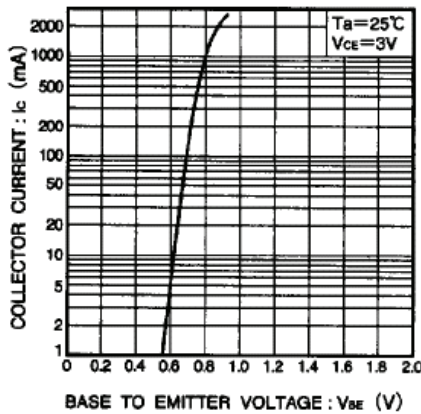


Fig.1 Grounded emitter propagation characteristics

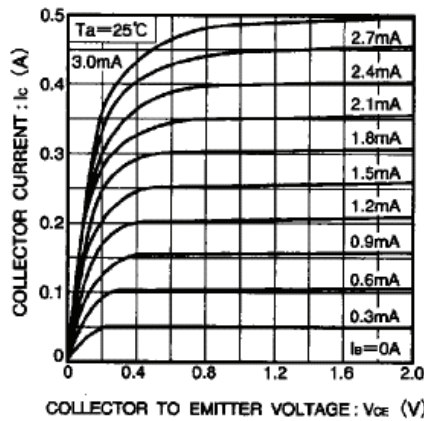


Fig.2 Grounded emitter output characteristics

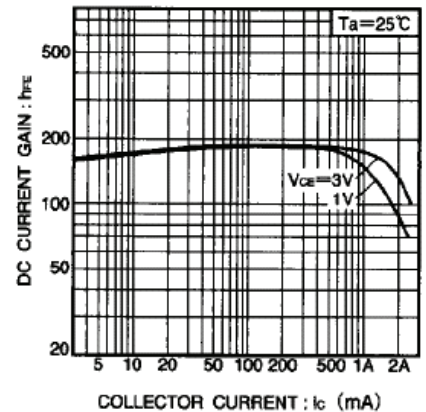


Fig.3 DC current gain vs. collector current

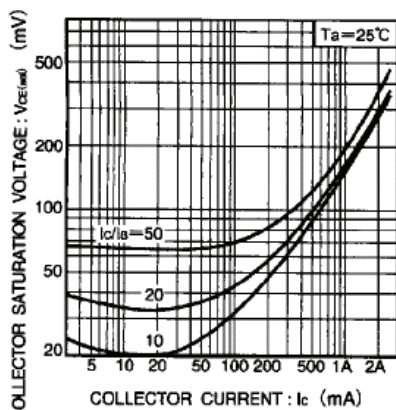


Fig.4 Collector-emitter saturation voltage vs. collector current

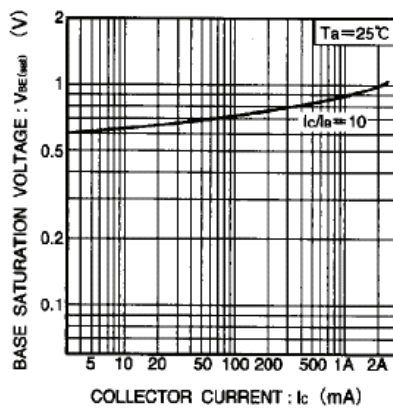


Fig.5 Collector-emitter saturation voltage vs. collector current

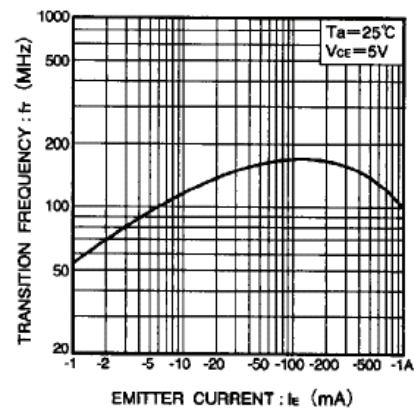


Fig.6 Transition frequency vs. emitter current

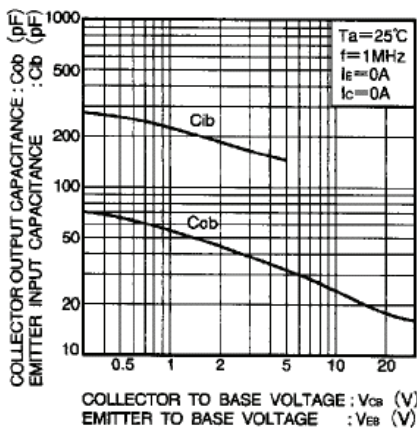


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

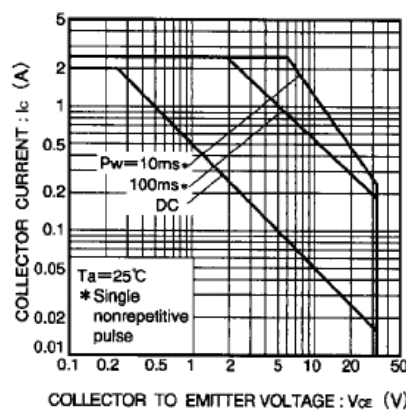
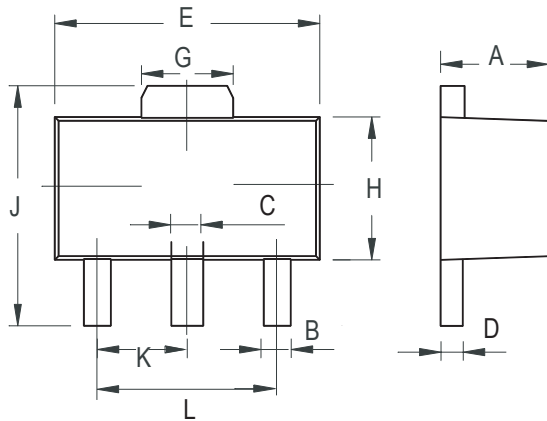


Fig.8 Safe operating area (2SD1766)

WTM1766**WEITRON****SOT-89 Outline Dimensions**

unit:mm



SOT-89		
Dim	Min	Max
A	1.400	1.600
B	0.320	0.520
C	0.360	0.560
D	0.350	0.440
E	4.400	4.600
G	1.400	1.800
H	2.300	2.600
J	3.940	4.250
K	1.500TYP	
L	2.900	3.100