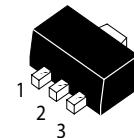


PNP/NPN Epitaxial Planar Transistors

 Lead(Pb)-Free

SOT-89



1. BASE
2. COLLECTOR
3. EMITTER

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Rating	Symbol	PNP/WTM772	NPN/WTM882	Unit
Collector-Emitter Voltage	V _{CEO}	-30	30	V _{dc}
Collector-Base Voltage	V _{CBO}	-40	40	V _{dc}
Emitter-Base Voltage	V _{EBO}	-5.0	5.0	V _{dc}
Collector Current (DC)	I _{C(DC)}	-3.0	3.0	A _{dc}
Collector Current (Pulse) ⁽¹⁾	I _{C (Pulse)}	-7.0	7.0	A _{dc}
Base Current	I _{B (Pulse)}	-0.6	0.6	A _{dc}
Total Device Dissipation T _A =25°C ⁽²⁾	P _D	0.5		W
Total Device Dissipation T _c =25°C ⁽³⁾	P _D	4		W
Junction Temperature	T _j	150		°C
Storage, Temperature	T _{stg}	-55 to +150		°C

Device Marking

WTM772=B772 , WTM882=D882

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage (I _C = -10/10 mA _{dc} , I _B =0)	V _{(BR)CEO}	-30/30	-	V _{dc}
Collector-Base Breakdown Voltage (I _C = -100/100 uA _{dc} , I _E =0)	V _{(BR)CBO}	-40/40	-	V _{dc}
Emitter-Base Breakdown Voltage (I _E = -100/100 uA _{dc} , I _C =0)	V _{(BR)EBO}	-5.0/5.0	-	V _{dc}
Collector Cutoff Current (V _{CE} = -30/30 V _{dc} , I _B =0)	I _{CEO}	-	-1.0/1.0	uA _{dc}
Collector Cutoff Current (V _{CB} = -40/40 V _{dc} , I _E =0)	I _{CBO}	-	-1.0/1.0	uA _{dc}
Emitter Cutoff Current (V _{EB} = -6.0/6.0V _{dc} , I _C =0)	I _{EBO}	-	-1.0/1.0	uA _{dc}

NOTE: 1. Pulse Test: PW≤350us, duty cycle≤2%

2. Tested in free air condition, without heat-sink.

3. Mounted on a 40 40×1mm \varnothing cerami board.

WTM772
WTM882



ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise noted) (Continued)

Characteristics	Symbol	Min	TYP	Max	Unit
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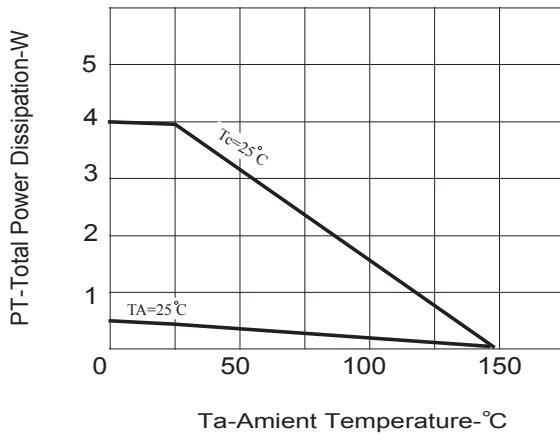
ON CHARACTERISTICS

DC Current Gain ($I_C = -1.0/1.0 \text{ Adc}, V_{CE} = -2.0/2.0 \text{ Vdc}$)	$h_{FE} (1)$	60	-	400	-
DC Current Gain ($I_C = -100/100 \text{ mAdc}, V_{CE} = -2.0/2.0 \text{ Vdc}$)	$h_{FE} (2)$	32	-	-	-
Collector-Emitter Saturation Voltage ($I_C = -2.0/2.0 \text{ Adc}, I_B = -0.2/0.2 \text{ mAdc}$)	$V_{CE(sat)}$	-	-	-0.5/0.5	Vdc
Base-Emitter Saturation Voltage ($I_C = -2.0/2.0 \text{ Adc}, I_B = -0.2/0.2 \text{ mAdc}$)	$V_{BE(sat)}$	-	-	-2.0/2.0	Vdc
Current-Gain-Bandwidth Product ($I_C = -0.1/0.1 \text{ mAdc}, V_{CE} = -5.0/5.0 \text{ Vdc}, f = 10 \text{ MHz}$)	f_T	-	80/90	-	MHz

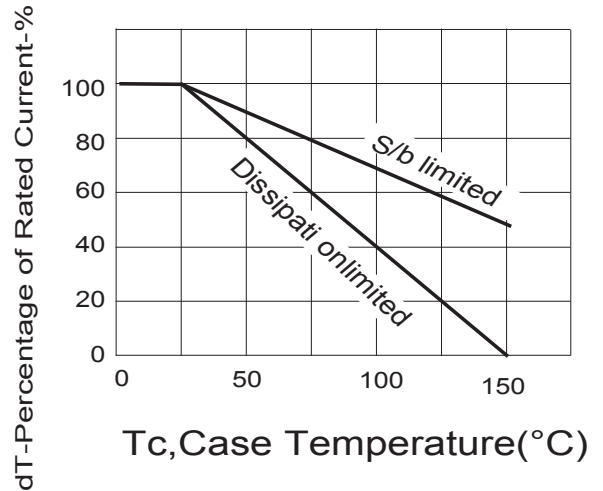
Classification of $h_{FE}(1)$

Rank	R	O	Y	GR
Range	60-120	100-200	160-320	200-400

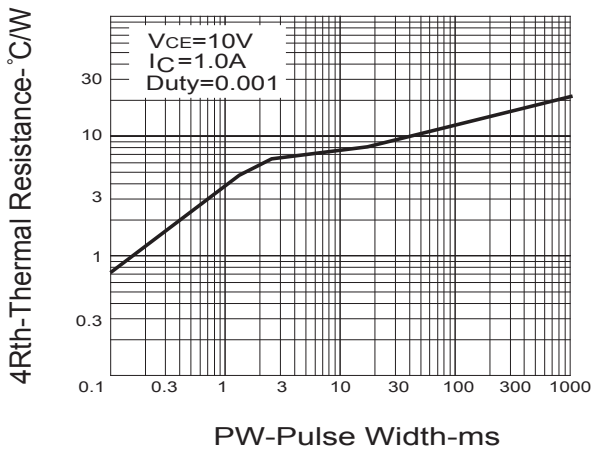
F1. Total Power Dissipation VS. Ambient Temperature



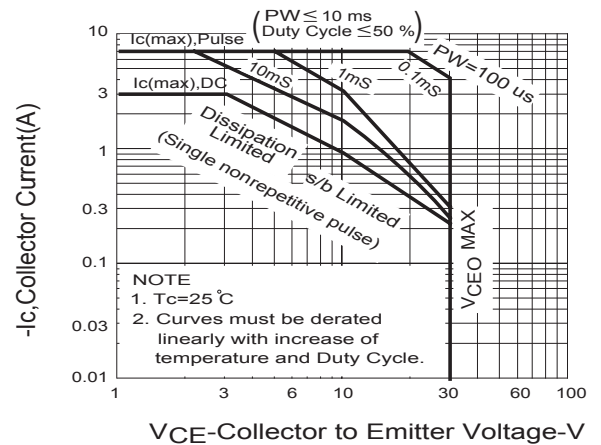
F.2 Derating Curve for All Types



F3. Thermal Resistance VS. Pulse Width

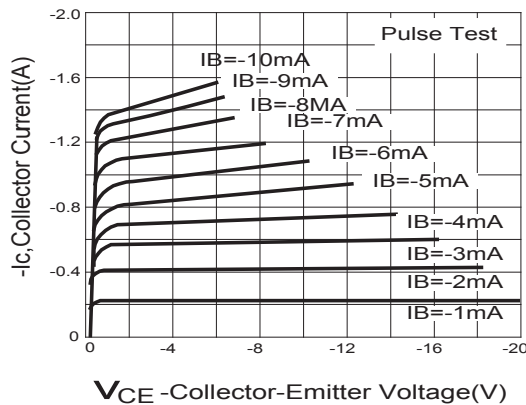


F4. Safe Operating Areas



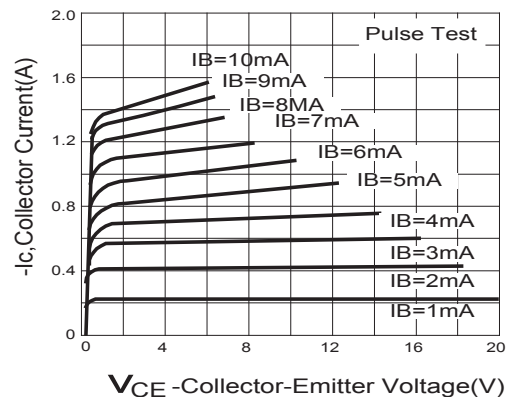
WTM772

F5. Collector Current VS. Collector To Emitter Voltage

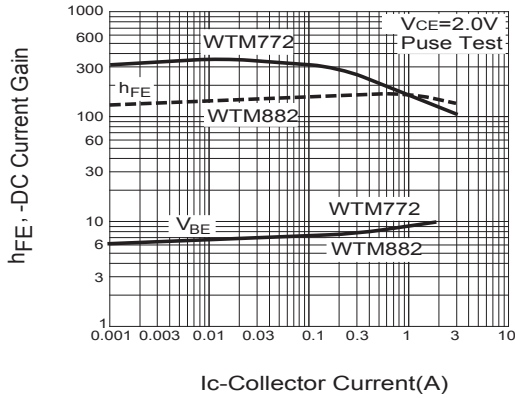


WTM882

F6. Collector Current VS. Collector To Emitter Voltage

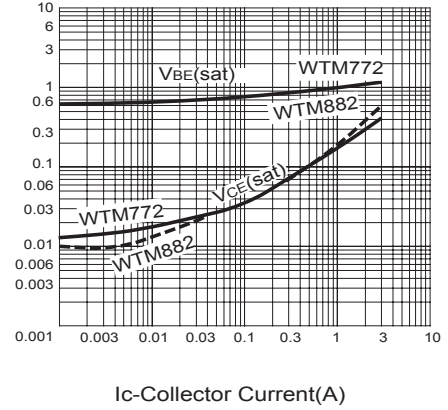


F7. $h_{FE}, V_{BE}-I_C$

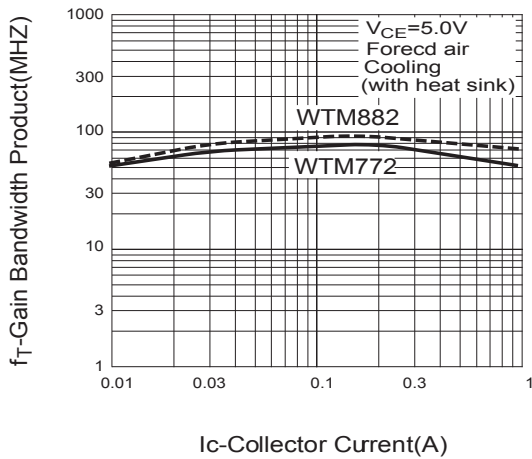


$V_{CE(sat)}$ -Collector Saturation Voltage(V)
 $V_{BE(sat)}$ -Base Saturation Voltage(V)

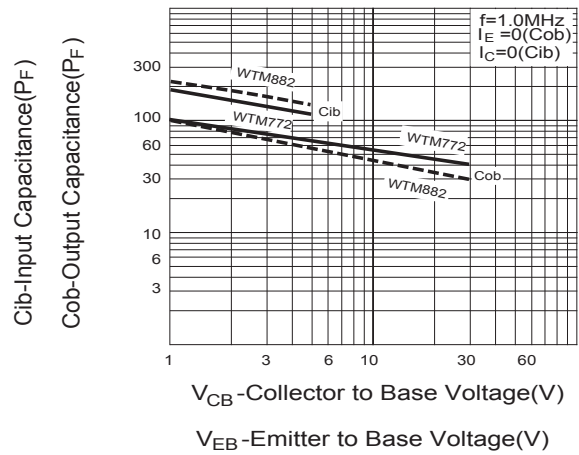
F8. $V_{CE(sat)}, V_{BE(sat)}-I_C$



F9. $f_T - I_C$

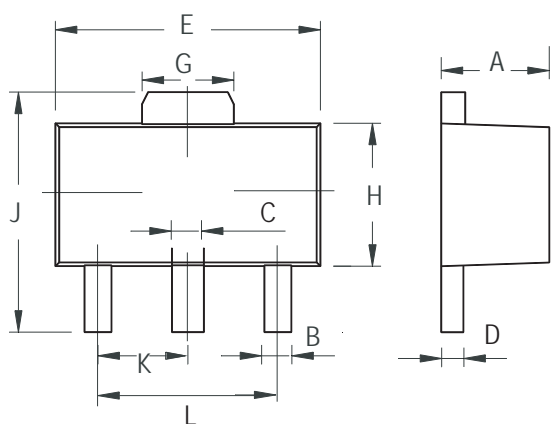


F10. $C_{ob}-V_{CB}, C_{ib}-V_{CE}$



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