

NPN EPITAXIAL PLANAR TRANSISTOR

 Lead(Pb)-Free

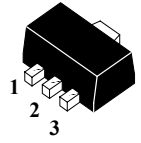
Features:

- * Collector-Emitter Voltage: $V_{CEO}=40V$
- * Complementary to WTM3906

Mechanical Data:

- * Case : Molded Plastic

1. BASE
2. COLLECTOR
3. EMITTER



SOT-89

ABSOLUTE MAXIMUM RATINGS($T_A=25^{\circ}C$ Unless Otherwise Noted)

Rating	Symbol	Value	Unit
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	40	V
Collector to Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	200	mA
Total Device Dissipation $T_A=25^{\circ}C$	P_D	1.0	W
Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature	T_{stg}	-55 to +150	$^{\circ}C$

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage $I_C=10\mu A, I_E=0$	BV_{CBO}	60	-	-	V
Collector-Emitter Breakdown Voltage $I_C=1.0mA, I_B=0$	BV_{CEO}	40	-	-	V
Emitter-Base Breakdown Voltage $I_E=10\mu A, I_C=0$	BV_{EBO}	6.0	-	-	V
Collector Cut-Off Current $V_{CE}=30V, V_{BE}=3V$	I_{CEX}	-	-	50	nA

ON CHARACTERISTICS¹

DC Current Gain $V_{CE}=1.0V, I_C=0.1mA$	$h_{FE(1)}$	40	-	-	
$V_{CE}=1.0V, I_C=1.0mA$	$h_{FE(2)}$	70	-	-	
$V_{CE}=1.0V, I_C=10mA$	$h_{FE(3)}$	100	-	300	-
$V_{CE}=1.0V, I_C=50mA$	$h_{FE(4)}$	60	-	-	
$V_{CE}=1.0V, I_C=100mA$	$h_{FE(5)}$	30	-	-	
Collector-Emitter Saturation Voltage $I_C=10mA, I_B=1.0mA$	$V_{CE(sat)}$	-	-	200	mV
$I_C=50mA, I_B=5.0mA$		-	-	300	
Collector-Emitter Saturation Voltage $I_C=10mA, I_B=1.0mA$	$V_{BE(sat)}$	650	-	850	mV
$I_C=50mA, I_B=5.0mA$		-	-	950	

DYNAMIC CHARACTERISTICS

Transition Frequency $V_{CE}=20V, I_C=10mA, f=100MHz$	f_T	300	-	-	MHz
Output Capacitance $V_{CB}=5.0V, I_E=0, f=1.0MHz$	C_{ob}	-	-	4.0	pF

Note1. Pulse Test: Pulse Width $\leq 380\mu s$, Duty Cycle $\leq 2\%$

DEVICE MARKING

WTM3904=3904

Typical Characteristic

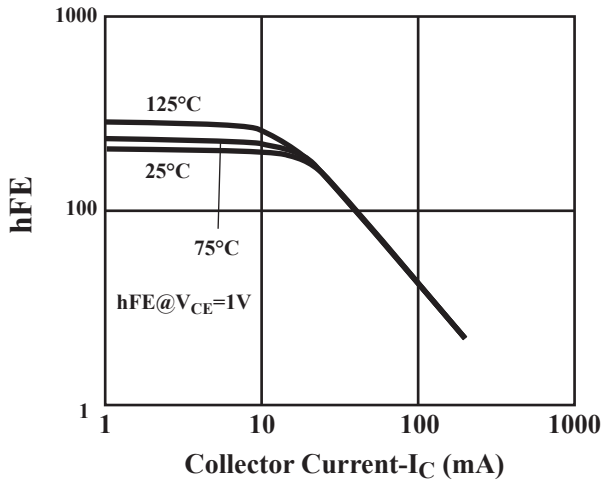


Fig.1 Current Gain & Collector Current

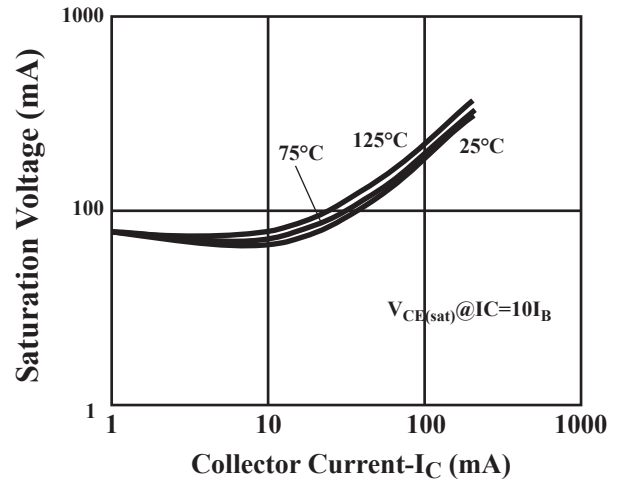


Fig.2 Saturation Voltage & Collector Current

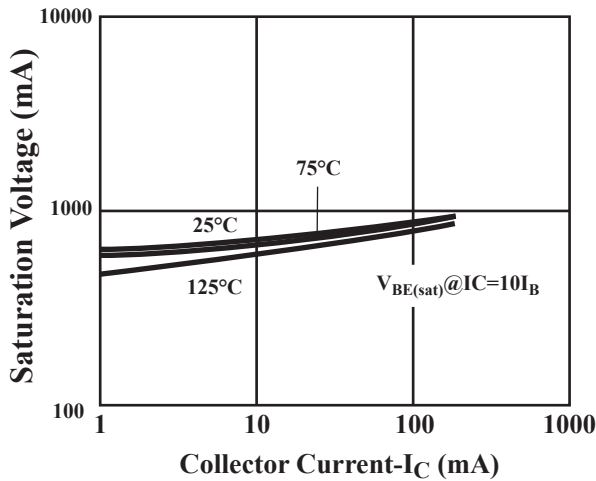


Fig.3 Saturation Voltage & Collector Current

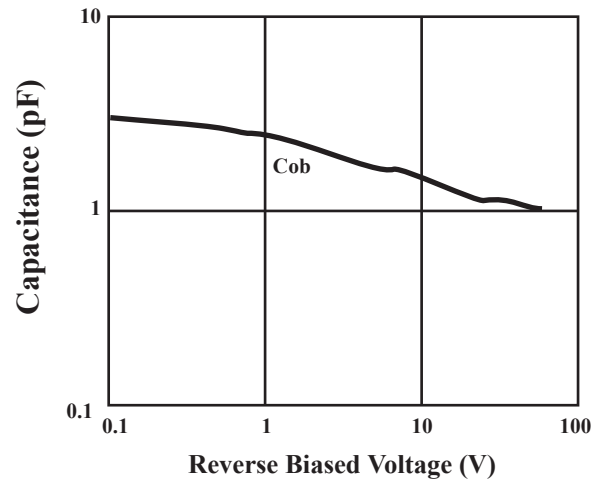


Fig.4 Capacitance & Reverse-Biased Voltage

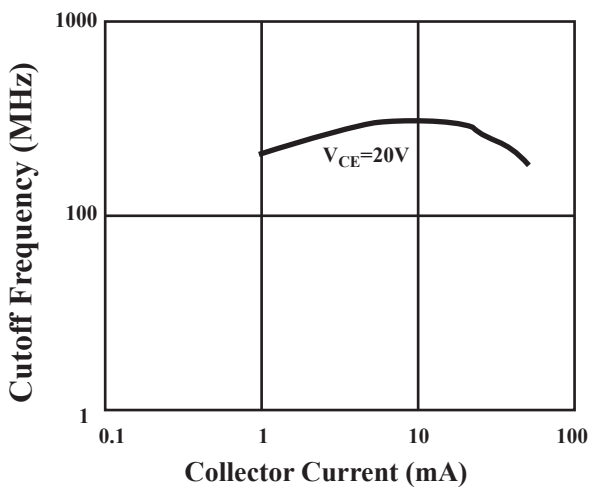


Fig.5 Cutoff Frequency & Collector Current

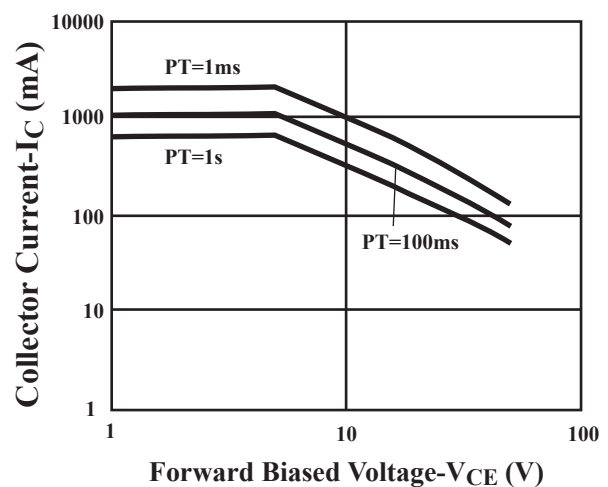
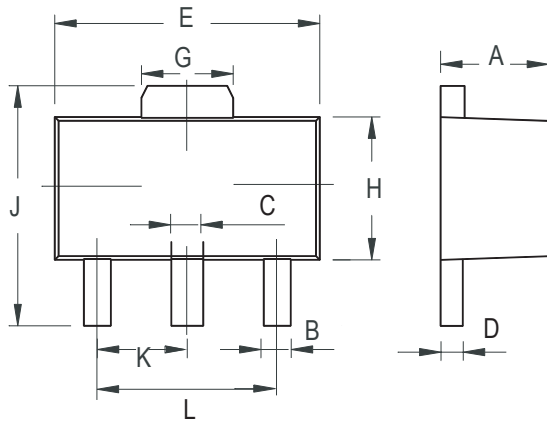


Fig.6 Safe Operating Area

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