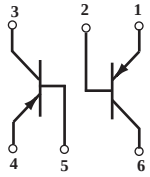
WEITRON

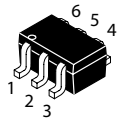
MBT2907ADW

Dual General Purpose Transistor
PNP+PNP Silicon

Lead(Pb)-Free



PNP+PNP



SOT-363(SC-88)

Maximum Ratings

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	-60	Vdc
Collector-Base Voltage	V_{CBO}	-60	Vdc
Emitter-Base Voltage	V_{EBO}	-5.0	Vdc
Collector Current-Continuous	I_C	-600	mAdc

Thermal Characteristics

Characteristics	Symbol	Max	Unit
Total Device Dissipation T_A=25°C	P_D	225	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Junction and Storage, Temperature	$T_{J,Tstg}$	-55 to +150	°C

Device Marking

MBT2907ADW=2F

Electrical Characteristics (T_A=25°C Unless Otherwise noted)

Characteristics	Symbol	Min	Max	Unit
Off Characteristics				
Collector-Emitter Breakdown Voltage[2] (I_C=-10mAdc.I_B=0)	$V_{(BR)CEO}$	-60	-	Vdc
Collector-Base Breakdown Voltage (I_C=-10 uAdc, I_E=0)	$V_{(BR)CBO}$	-60	-	Vdc
Emitter-Base Breakdown Voltage (I_E=10 uAdc, I_C=0)	$V_{(BR)EBO}$	-5.0	-	Vdc
Base Cutoff Current (V_{CE}=-30 Vdc, V_{EB} =-0.5 Vdc)	I_{BL}	-	-50	nAdc
Collector Cutoff Current (V_{CE}=-30Vdc, V_{EB}=-0.5Vdc)	I_{CEX}	-	-50	nAdc

1. Device Mounted FR4 glass epoxy printed circuit board using the minimun recommended footprint.

2. Pulse Test:Pulse Width≦300uS, Duty Cycle≦2.0%

Electrical Characteristics (T_A=25℃ unless otherwise noted) (Countinued)

Characteristics	Symbol	Min	Max	Unit

On Characteristics

DC Current Gain				
(I_C= -100uAdc, V_{CE}=-10Vdc)	H_{FE}	75	-	-
(I_C= -1.0 mAdc, V_{CE}= -10Vdc)		100	-	
(I_C= -10 mAdc, V_{CE}= -10Vdc)		100	-	
(I_C= -150 mAdc, V_{CE}= -10Vdc)		100	300	
(I_C= -500 mAdc, V_{CE}= -10Vdc)		50	-	
Collector-Emitter Saturation Voltage				
(I_C= -150 mAdc, I_B= -15mAdc)	$V_{CE(sat)}$	-	-0.4	Vdc
(I_C= -500 mAdc, I_B= -50mAdc)		-	-1.6	
Base-Emitter Saturation Voltage				
(I_C= 150 mAdc, I_B= 15 mAdc)	$V_{BE(sat)}$	-	-1.3	Vdc
(I_C= 500 mAdc, I_B= 50 mAdc)		-	-2.6	

Small-signal Characteristics

Current-Gain-Bandwidth Product (I_C= -50 mAdc, V_{CE}= -20 Vdc, f=100MHz)	f_T	200	-	MHz
Output Capacitance (V_{CB}= -10 Vdc, I_E=0, f=1.0MHz)	C_{obo}	-	8.0	pF
Input Capacitance (V_{EB}=-2.0 Vdc, I_C=0, f=1.0MHz)	C_{ibo}	-	30	pF

Switching Characteristics

Turn-On Time		t_{off}	-	45	ns
Delay Time	(Vcc= -30 Vdc, Ic= -150 mAdc, I_{B1}= -15 mAdc)	t_d	-	10	
Rise Time		t_r	-	40	
Turn-Off Time		t_{off}	-	100	

TYPICAL CHARACTERISTICS

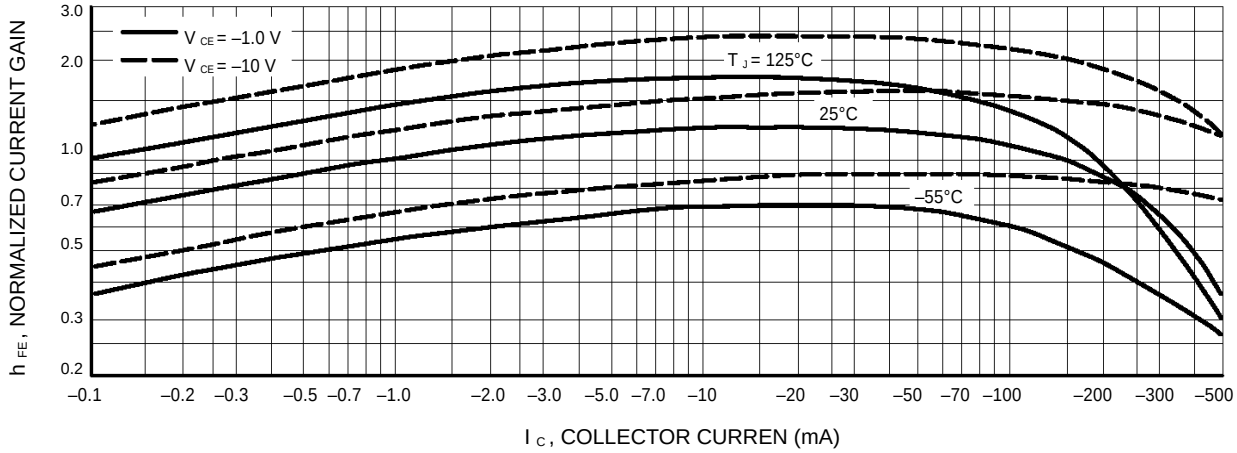


Figure 3. DC Current Gain

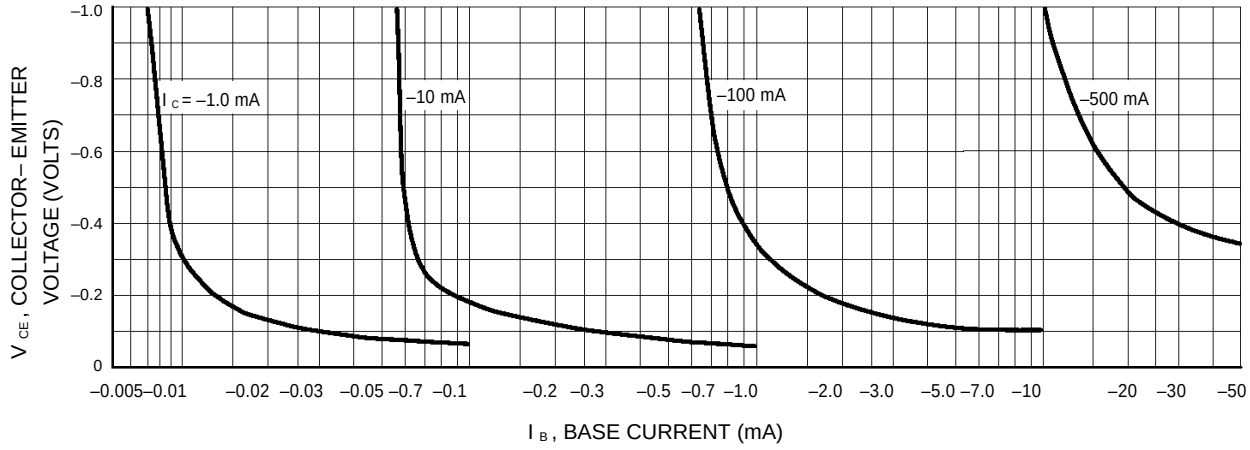


Figure 4. Collector Saturation Region

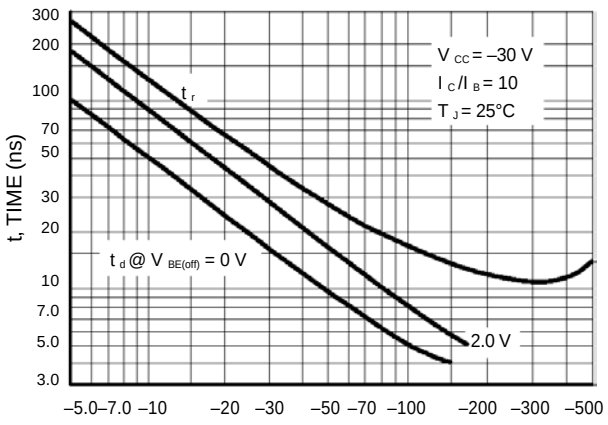


Figure 5. Turn–On Time

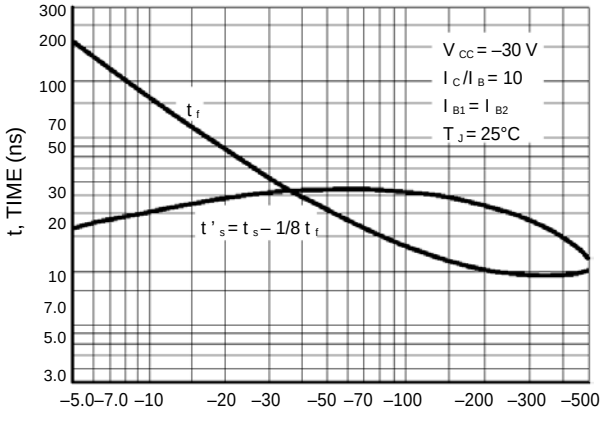


Figure 6. Turn–Off Time

TYPICAL SMALL–SIGNAL CHARACTERISTICS

NOISE FIGURE

V_{CE} = 10 Vdc, T_A = 25°C

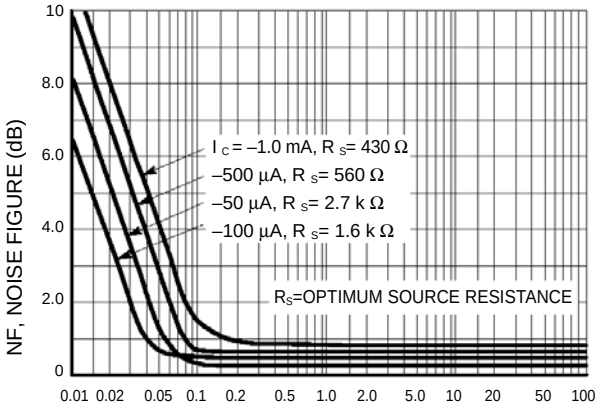


Figure 7. Frequency Effects

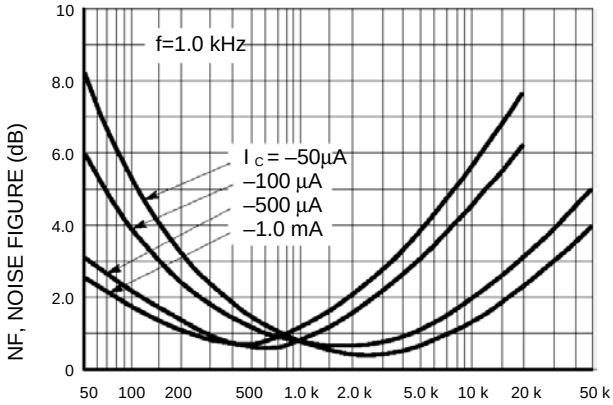


Figure 8. Source Resistance Effects

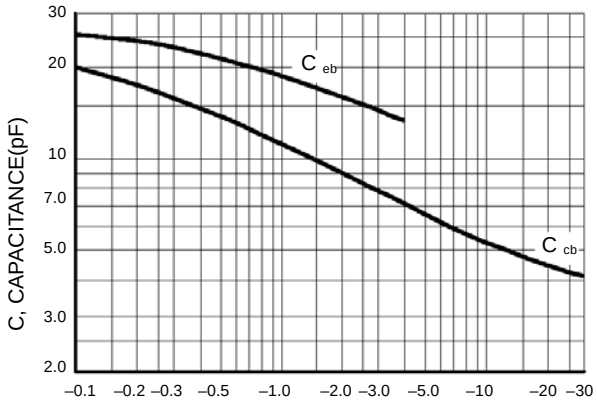


Figure 9. Capacitances

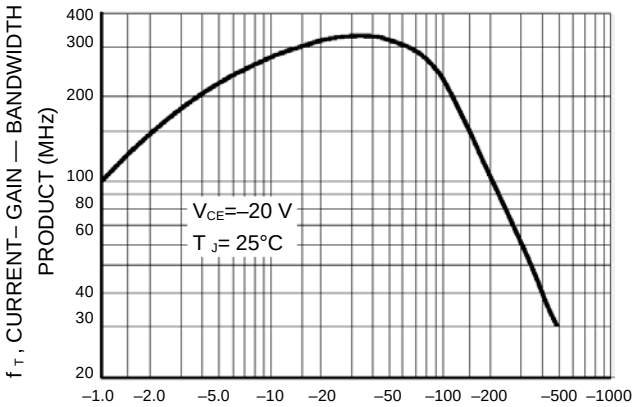


Figure 10. Current–Gain — Bandwidth Product

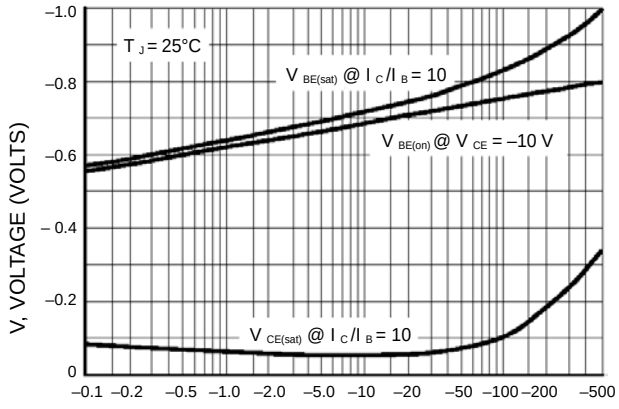


Figure 11. "On" Voltage

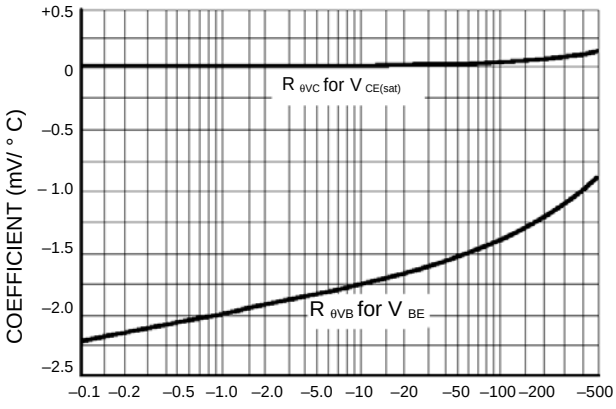
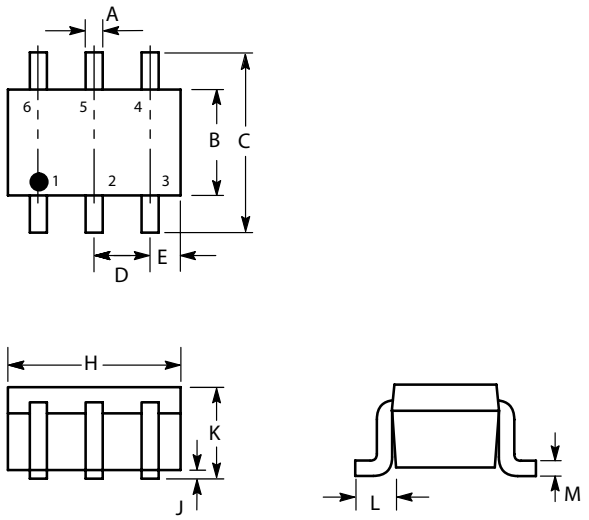


Figure 12. Temperature Coefficients

SOT-363 Package Outline Dimensions

Unit:mm



SOT-363		
Dim	**Min**	**Max**
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 REF	
E	0.30	0.40
H	1.80	2.20
J	-	0.10
K	0.80	1.10
L	0.25	0.40
M	0.10	0.25