

Transistor

Silicon PNP Epitaxial Type

For High-Speed Switching Use

DC To VHF Amplifier

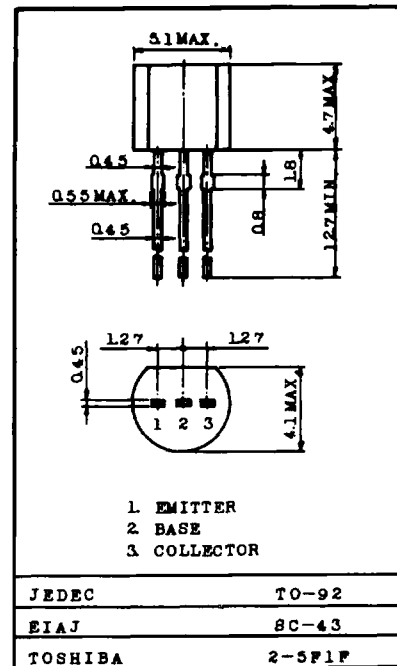
Features

- High DC Current Gain Specified
 - $I_C = -0.1 \sim -500\text{mA}$
- High Transition Frequency
 - @ $I_C = -50\text{mA}$, $f_T = 200\text{MHz}$ (Min.)
- Low Collector-Emitter Saturation Voltage
 - $V_{CE(sat)} = -1.6\text{V}$ (Max.) @ $I_C = -500\text{mA}$,
- Complementary to MPS2222

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5.0	V
Collector Current	I_C	-600	mA
Base Current	I_b	-120	mA
Total Device Dissipation @ ($T_a = 25^\circ\text{C}$) Derate above 25°C	P_C	625	mW
		5.0	mW/ $^\circ\text{C}$
Total Device Dissipation @ ($T_c = 25^\circ\text{C}$) Derate above 25°C	P_C	1.5	W
		12	mW/ $^\circ\text{C}$
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{sg}	-55 ~ 150	$^\circ\text{C}$

Unit in mm



Weight : 0.21g

Electrical Characteristics (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	MAX.	UNIT	
Collector Cut-off Current	I_{CBO}	$V_{CB} = -50V, I_E = 0$	–	-20	nA	
Collector Cut-off Current	I_{CBO}	$V_{CB} = -50V, I_E = 0, T_a = 150^{\circ}C$	–	-20	μA	
Collector Cut-off Current	I_{CEX}	$V_{CE} = -30V, V_{BE} = 0.5V$	–	-50	nA	
Base Cut-off Current	I_{BL}	$V_{CE} = -30V, V_{BE} = 0.5V$	–	-50	nA	
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-60	–	V	
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10mA, I_B = 0$	-40	–	V	
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-5.0	–	V	
DC Current Gain	h_{FE}	$V_{CE} = -10V, I_C = -0.1mA$	75	–		
		$V_{CE} = -10V, I_C = -1.0mA$	100	–		
		$V_{CE} = -10V, I_C = -10mA$	100	–		
		$V_{CE} = -10V, I_C = -150mA$	100	300		
		$V_{CE} = -10V, I_C = -500mA$	50	–		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -150mA, I_B = -15mA$	–	-0.4	V	
		$I_C = -500mA, I_B = -50mA$	–	-1.6		
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -150mA, I_B = -15mA$	–	-1.3	V	
		$I_C = -500mA, I_B = -50mA$	–	-2.6		
Transition Frequency	f_T	$V_{CE} = -20V, I_C = -50mA, f = 100MHz$	200	–	MHz	
Collector Output Capacitance	C_{ob}	$V_{CB} = -10V, I_E = 0, f = 100kHz$	–	8.0	pF	
Input Capacitance	C_{ib}	$V_{BE} = -2.0V, I_C = 0, f = 100kHz$	–	30	pF	
Switching Time	Turn-on Time	t_{on}		45	ns	
	Delay Time	t_d	$V_{CC} = -30V, I_C = -150mA$ $I_{B1} = 15mA$	–		10
	Rise Time	t_r	Fig. 1	–		40
	Turn-off Time	t_{off}	$V_{CC} = 6.0V, I_C = -150mA,$ $-I_{B1} = I_{B2} = -15mA$	–		100
	Storage Time	t_{stg}	Fig. 2	–		80
	Fall Time	t_f		–		30

Figure 1. DELAY AND RISE TIME EQUIVALENT TEST CURCUIT

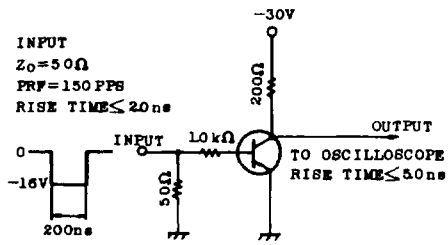


Figure 2. STORAGE TIME AND FALL TIME EQUIVALENT TEST CIRCUIT

