

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

# 2SC383TM, 2SC388ATM

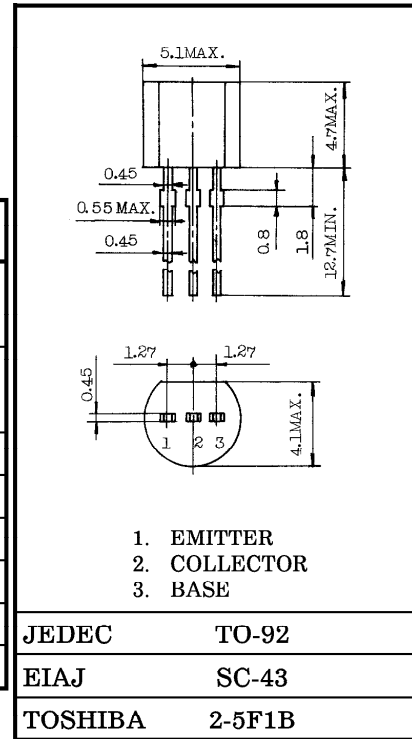
TV FINAL PICTURE IF AMPLIFIER APPLICATIONS.

Unit in mm

- High Gain :  $G_{pe} = 33\text{dB}$  (Typ.) ( $f = 45\text{MHz}$ )
- Good Linearity of  $h_{FE}$ .

MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT	
Collector Base Voltage	$V_{CB0}$	2SC383TM	50	V
		2SC388ATM	30	
Collector Emitter Voltage	$V_{CE0}$	2SC383TM	45	V
		2SC388ATM	25	
Emitter-Base Voltage	$V_{EB0}$	4	V	
Collector Current	$I_C$	50	mA	
Emitter Current	$I_E$	-50	mA	
Collector Power Dissipation	$P_C$	300	mW	
Junction Temperature	$T_j$	125	$^\circ\text{C}$	
Storage Temperature Range	$T_{stg}$	-55~125	$^\circ\text{C}$	



Weight : 0.21g

ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 50\text{V}, I_E = 0$	—	—	0.1	$\mu\text{A}$	
		$V_{CB} = 30\text{V}, I_E = 0$	—	—	0.1		
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 3\text{V}, I_C = 0$	—	—	0.1		
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	2SC383TM	45	—	—	V
			2SC388ATM	25	—	—	
DC Current Gain	$h_{FE}$	$V_{CE} = 12.5\text{V}, I_C = 12.5\text{mA}$	2SC383TM	20	—	100	—
			2SC388ATM	20	—	200	
Saturation Voltage	Collector-Emitter	$I_C = 15\text{mA}, I_B = 1.5\text{mA}$	$V_{CE(sat)}$	—	—	0.2	V
	Base-Emitter		$V_{BE(sat)}$	—	—	1.5	
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = \text{MHz}$	0.8	—	2.0	pF	
Collector-Base Time Constant	$C_{c,rbb'}$	$V_{CB} = 10\text{V}, I_E = -1\text{mA}, f = 30\text{MHz}$	—	—	25	ps	
Transition Frequency	$f_T$	$V_{CE} = 12.5\text{V}, I_C = 12.5\text{mA}$	300	—	—	MHz	
Power Gain (Fig.1)	$G_{pe}$	$V_{CC} = 12.5\text{V}, I_E = -12.5\text{mA}, f = 45\text{MHz}$	2SC383TM	29	—	36	dB
			2SC388ATM	28	—	36	

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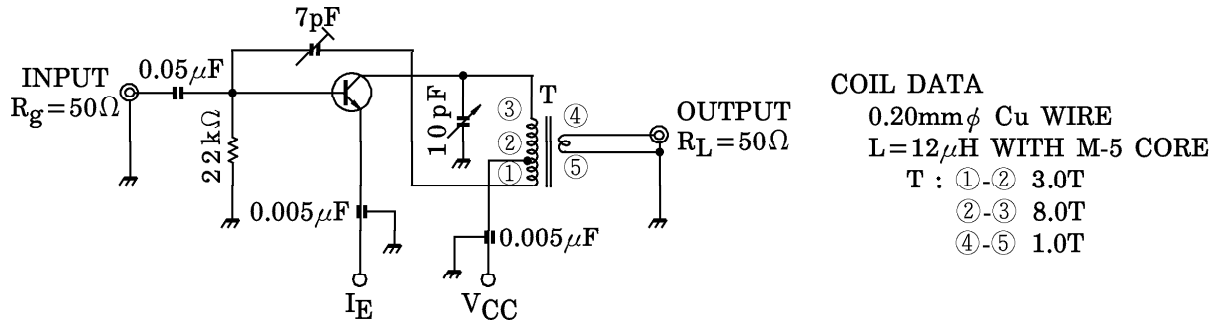
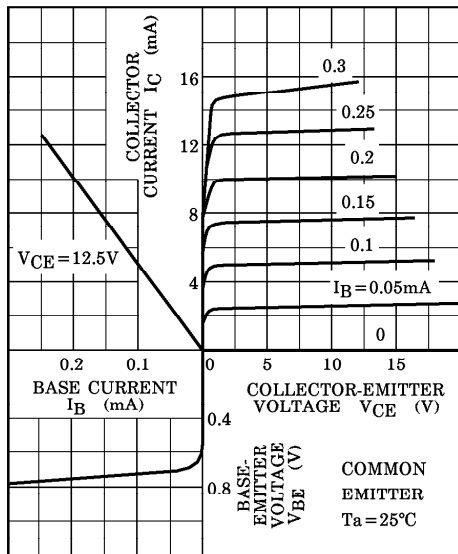
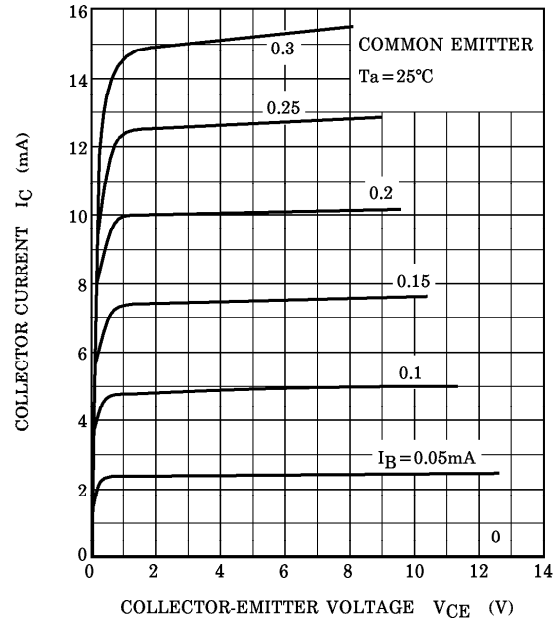


Fig.1 45MHz G<sub>pe</sub> TEST CIRCUIT

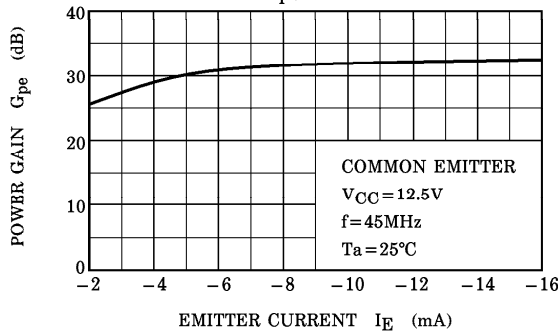
STATIC CHARACTERISTICS



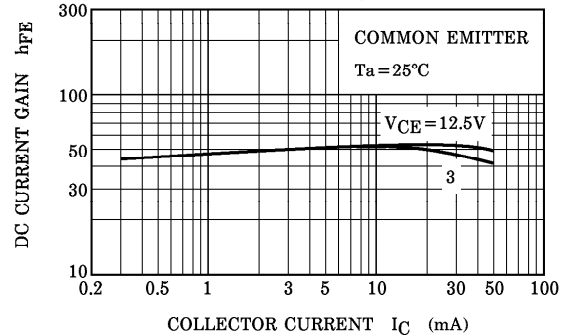
$I_C - V_{CE}$



$G_{pe} - I_E$  (See Fig.1)



$h_{FE} - I_C$



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