

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC2216, 2SC2717

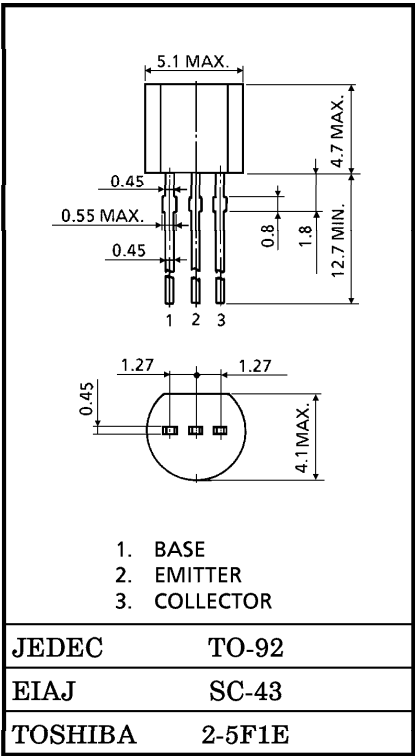
TV FINAL PICTURE IF AMPLIFIER APPLICATIONS

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	2SC2216	V_{CBO}	50	V
	2SC2717		30	
Collector-Emitter Voltage	2SC2216	V_{CEO}	45	V
	2SC2717		25	
Emitter-Base Voltage		V_{EBO}	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 : 0.21 g

000707EAA1

- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc..
- The TOSHIBA products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These TOSHIBA products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc.. Unintended Usage of TOSHIBA products listed in this document shall be made at the customer's own risk.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	2SC2216	I_{CBO}	$V_{CB} = 50\text{ V}, I_E = 0$	—	—	0.1	μA
	2SC2717		$V_{CB} = 30\text{ V}, I_E = 0$				
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 3\text{ V}, I_C = 0$	—	—	0.1	μA
Collector-Emitter Breakdown Voltage	2SC2216	$V_{(BR)}\text{ CEO}$	$I_C = 10\text{ mA}, I_B = 0$	45	—	—	V
	2SC2717			25	—	—	
DC Current Gain	2SC2216	h_{FE}	$V_{CE} = 12.5\text{ V}, I_C = 12.5\text{ mA}$	40	—	140	—
	2SC2717			40	—	240	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 15\text{ mA}, I_B = 1.5\text{ mA}$	—	—	0.2	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = 15\text{ mA}, I_B = 1.5\text{ mA}$	—	—	1.5	V
Collector Output Capacitance		C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0,$ $f = 30\text{ MHz}$	0.8	—	2.0	pF
Collector-Base Time Constant		$C_{c\cdot rbb'}$	$V_{CB} = 10\text{ V}, I_E = -1\text{ mA},$ $f = 30\text{ MHz}$	—	—	25	ps
Transition Frequency		f_T	$V_{CE} = 12.5\text{ V}, I_C = 12.5\text{ mA}$	300	—	—	MHz
Power Gain (Fig.)	2SC2216	G_{pe}	$V_{CC} = 12.5\text{ V}, I_E = -12.5\text{ mA},$ $f = 45\text{ MHz}$	29	—	36	dB
	2SC2717			28	—	36	

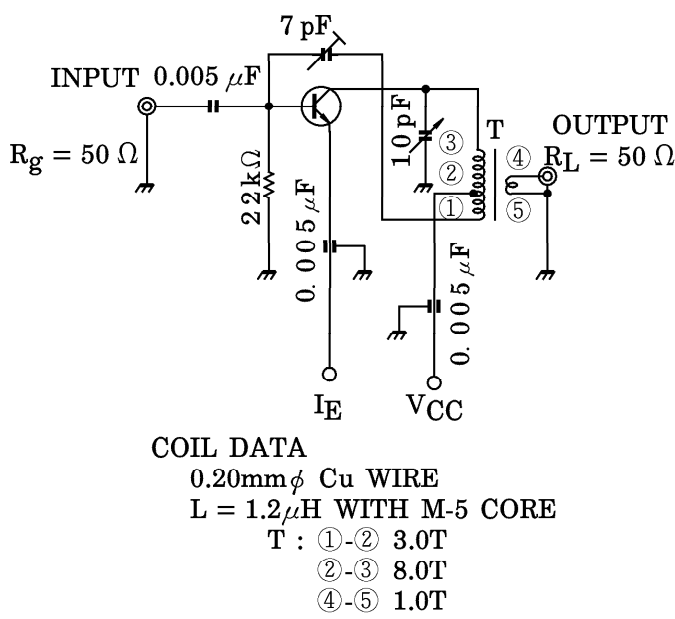


Fig. 45MHz G_{pe} TEST CIRCUIT

