

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

# 2SC4439

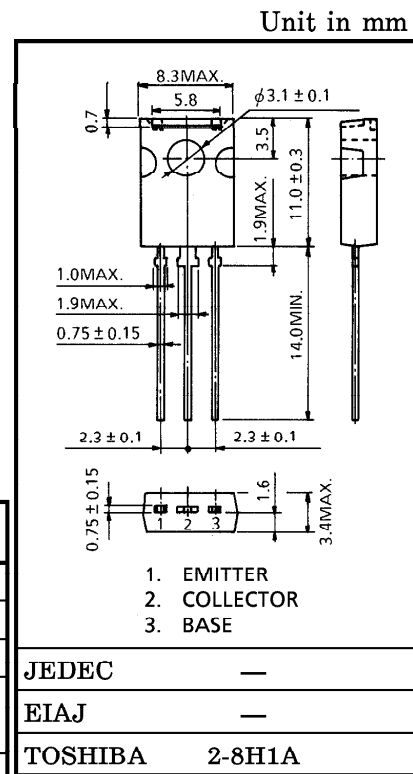
VIDEO OUTPUT STAGE IN HIGH RESOLUTION DISPLAY.

HIGH SPEED SWITCHING APPLICATIONS.

- High Transition Frequency.  
:  $f_T = 400\text{MHz}$  (Typ.) ( $V_{CE} = 10\text{V}$ ,  $I_C = 70\text{mA}$ )
- Low Collector Output Capacitance  
:  $C_{ob} < 5\text{pF}$  (Max.) ( $V_{CB} = 30\text{V}$ )
- High Voltage :  $V_{CEO} = 150\text{V}$
- High Collector Power Dissipation Capability :  $P_C = 8\text{W}$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	180	V
Collector-Emitter Voltage		$V_{CEO}$	150	V
Emitter-Base Voltage		$V_{EBO}$	5	V
Collector Current	DC	$I_C$	0.3	A
	Pulse	$I_{CP}$	0.5	
Base Current		$I_B$	0.2	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	$P_C$	1.5	W
	$T_c = 25^\circ\text{C}$		8	
Junction Temperature		$T_j$	150	$^\circ\text{C}$
Storage Temperature Range		$T_{stg}$	-55~150	$^\circ\text{C}$



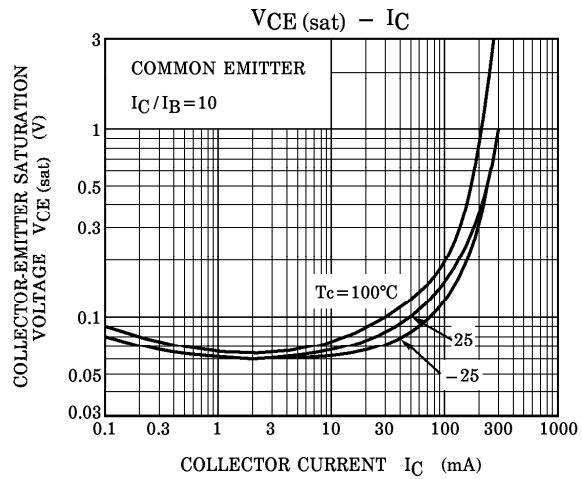
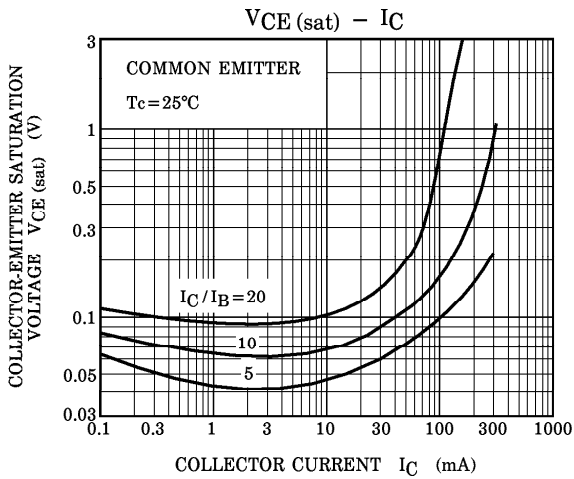
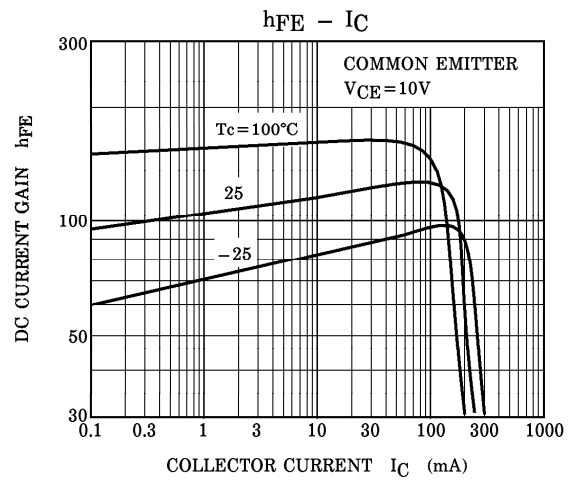
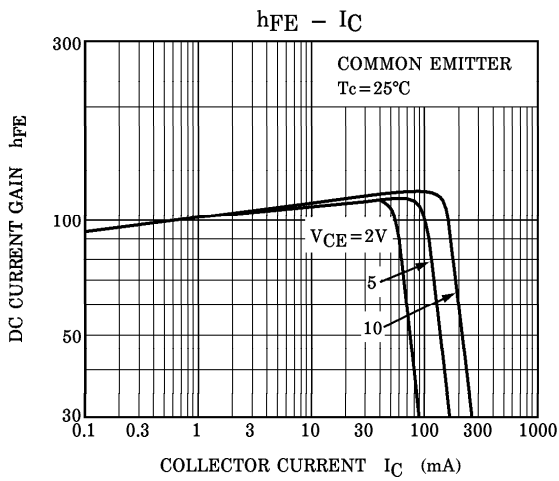
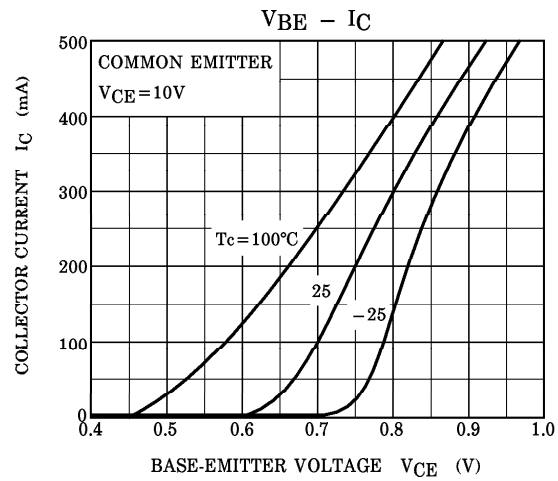
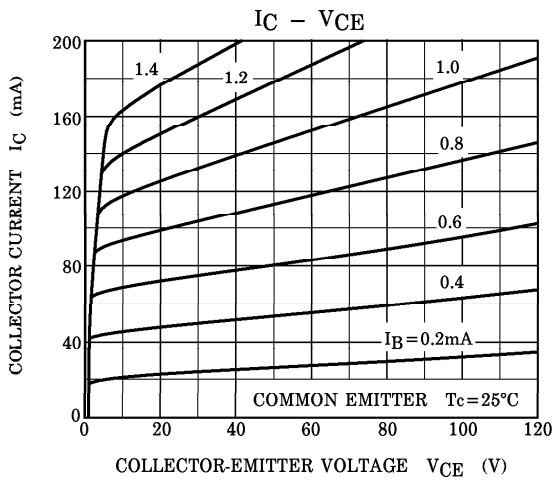
Weight : 0.82g

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 150\text{V}$ , $I_E = 0$	—	—	10	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 5\text{V}$ , $I_C = 0$	—	—	10	$\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}$ , $I_B = 0$	150	—	—	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 10\text{V}$ , $I_C = 50\text{mA}$	40	—	240	
	$h_{FE(2)}$	$V_{CE} = 10\text{V}$ , $I_C = 200\text{mA}$	20	—	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 200\text{mA}$ , $I_B = 20\text{mA}$	—	1.5	2.0	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 200\text{mA}$ , $I_B = 20\text{mA}$	—	1.5	2.0	V
Transition Frequency	$f_T$	$V_{CE} = 10\text{V}$ , $I_C = 70\text{mA}$	300	400	—	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 30\text{V}$ , $f = 1\text{MHz}$ , $I_E = 0$	—	4.0	5.0	pF

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