

**TOSHIBA**

**2SC3613**

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

# 2SC3613

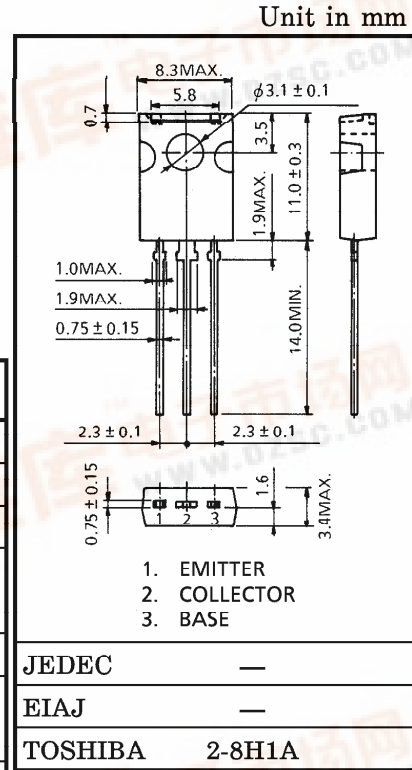
VIDEO DRIVER STAGE IN HIGH RESOLUTION DISPLAY.

HIGH SPEED SWITCHING APPLICATIONS.

- High Transition Frequency :  $f_T=3.5\text{GHz}$  (Typ.)
- Low Collector Output Capacitance :  $C_{ob}=3.3\text{pF}$  (Typ.)
- Collector-metal (Fin) is Fully Covered with Mold Resin.

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	20	V
Collector-Emitter Voltage		$V_{CEO}$	18	V
Emitter-Base Voltage		$V_{EBO}$	3	V
Collector Current	DC	$I_C$	0.5	A
	Pulse	$I_{CP}$	0.8	
Base Current		$I_B$	0.2	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	$P_C$	1.5	W
	$T_c = 25^\circ\text{C}$		5	
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	$I_{CBO}$	$V_{CB}=20\text{V}, I_E=0$	—	—	1.0	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=2\text{V}, I_C=0$	—	—	10	$\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	18	—	—	V
DC Current Gain	$h_{FE}$	$V_{CE}=10\text{V}, I_C=20\text{mA}$	25	—	200	
		$V_{CE}=10\text{V}, I_C=200\text{mA}$	20	—	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50\text{mA}, I_B=5\text{mA}$	—	—	1.0	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=50\text{mA}, I_B=5\text{mA}$	—	—	1.2	V
Transition Frequency	$f_T$	$V_{CE}=10\text{V}, I_C=20\text{mA}$	2.0	3.5	—	GHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}, I_E=0$	—	3.3	5.0	pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=10\text{V}, f=1\text{MHz}$	—	2.0	—	pF

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