

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

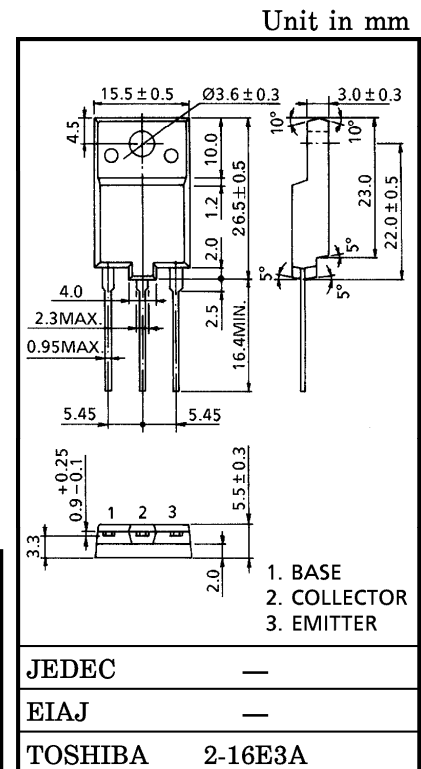
**2SC5149**HORIZONTAL DEFLECTION OUTPUT FOR MEDIUM RESOLUTION  
DISPLAY, COLOR TV

HIGH SPEED SWITCHING APPLICATIONS

- High Speed :  $t_f = 0.2 \mu\text{s}$  (Typ.)
- High Voltage :  $V_{CBO} = 1500 \text{ V}$
- Low Saturation Voltage :  $V_{CE}(\text{sat}) = 5 \text{ V}$  (Max.)
- Built-in Damper Type
- Collector Metal (Fin) is Fully Covered with Mold Resin.

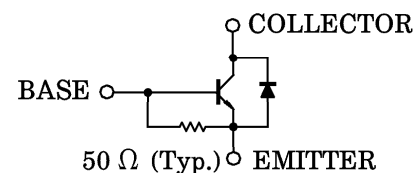
MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	1500	V
Collector-Emitter Voltage		$V_{CEO}$	600	V
Emitter-Base Voltage		$V_{EBO}$	5	V
Collector Current	DC	$I_C$	8	A
	Pulse	$I_{CP}$	16	
Base Current		$I_B$	4	A
Collector Power Dissipation ( $T_c = 25^\circ\text{C}$ )		$P_C$	50	W
Junction Temperature		$T_j$	150	$^\circ\text{C}$
Storage Temperature Range		$T_{stg}$	-55~150	$^\circ\text{C}$



Weight : 5.5 g (Typ.)

## EQUIVALENT CIRCUIT



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1999-09-02 1/4

## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 1500\text{ V}, I_E = 0$	—	—	1	mA
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 5\text{ V}, I_C = 0$	66	—	200	mA
Emitter-Base Breakdown Voltage	$V_{EBO}$	$I_E = 400\text{ mA}, I_C = 0$	5	—	—	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	8	—	25	
	$h_{FE(2)}$	$V_{CE} = 5\text{ V}, I_C = 5\text{ A}$	3.8	—	8.0	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5\text{ A}, I_B = 1.3\text{ A}$	—	—	5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 5\text{ A}, I_B = 1.3\text{ A}$	—	1.0	1.3	V
Forward Voltage (Damper Diode)	$-V_F$	$I_F = 5\text{ A}$	—	1.35	1.8	V
Transition Frequency	$f_T$	$V_{CE} = 10\text{ V}, I_C = 0.1\text{ A}$	—	2	—	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	110	—	pF
Switching Time	Storage Time	$I_{CP} = 5\text{ A}, I_{B1}(\text{end}) = 1.1\text{ A}, f_H = 31.5\text{ kHz}$	—	4	6	$\mu\text{s}$
	Fall Time		—	0.2	0.5	

