

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

2SD2499

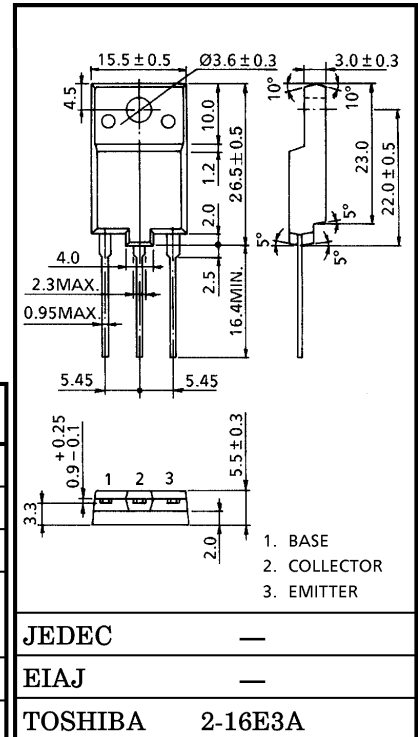
HORIZONTAL DEFLECTION OUTPUT FOR COLOR TV

Unit in mm

- High Voltage : $V_{CBO}=1500V$
- Low Saturation Voltage
: $V_{CE(sat)}=5V$ (Max.) ($I_C=4A, I_B=0.8A$)
- High Speed : $t_f=0.3\mu s$ (Typ.)
- Built-in Damper Type
- Collector Metal (Fin) is Fully Covered with Mold Resin.

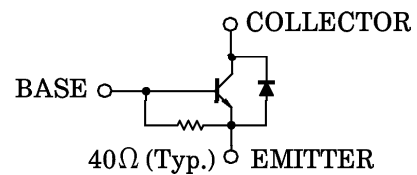
MAXIMUM RATINGS ($T_a=25^\circ C$)

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	6
	Pulse	I_{CP}	12
Base Current	I_B	3	A
Collector Power Dissipation ($T_c=25^\circ C$)	P_C	50	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55~150	$^\circ C$



Weight : 5.5g

EQUIVALENT CIRCUIT



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 1500V, I_E = 0$	—	—	1	mA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 5V, I_C = 0$	66	—	200	mA
Emitter-Base Breakdown Voltage		V_{EBO}	$I_E = 400mA, I_C = 0$	5	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 5V, I_C = 1A$	8	—	25	
		$h_{FE(2)}$	$V_{CE} = 5V, I_C = 4A$	5	—	9	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 4A, I_B = 0.8A$	—	—	5	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = 4A, I_B = 0.8A$	—	1.05	1.3	V
Forward Voltage (Damper Diode)		$-V_F$	$I_F = 6A$	—	1.6	2.0	V
Transition Frequency		f_T	$V_{CE} = 10V, I_C = 0.1A$	—	2	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	95	—	pF
Switching Time (Fig.1)	Storage Time	t_{stg}	$I_{CP} = 4A, I_{B1}(\text{end}) = 0.8A, f_H = 15.75kHz$	—	9.0	12	μs
	Fall Time	t_f		—	0.25	0.6	

Fig.1 SWITCHING TIME TEST CIRCUIT

