

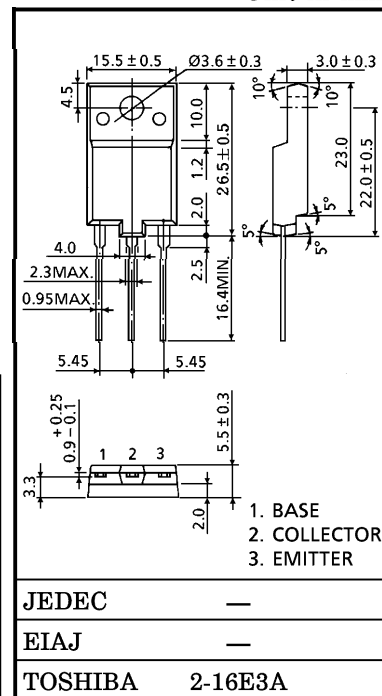
TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

2SD2499

HORIZONTAL DEFLECTION OUTPUT FOR COLOR TV

Unit in mm

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

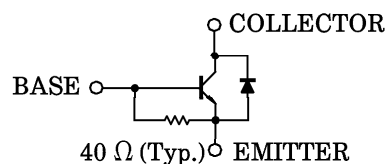


Weight : 5.5 g (Typ.)

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	$^\circ C$

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}	$V_{CB} = 1500 \text{ V}, I_E = 0$	—	—	1	mA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$	67	—	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	—
	$h_{FE} (2)$	$V_{CE} = 5 \text{ V}, I_C = 4 \text{ A}$	5	—	9	
Collector-Emitter Saturation Voltage	$V_{CE} (\text{sat})$	$I_C = 4 \text{ A}, I_B = 0.8 \text{ A}$	—	—	5	V
Base-Emitter Saturation Voltage	$V_{BE} (\text{sat})$	$I_C = 4 \text{ A}, I_B = 0.8 \text{ A}$	—	1.05	1.3	V
Forward Voltage (Damper Diode)	$-V_F$	$I_F = 6 \text{ A}$	—	1.6	2.0	V
Transition Frequency	f_T	$V_{CE} = 10 \text{ V}, I_E = 0.1 \text{ A}$	—	2	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	95	—	pF
Switching Time (Fig.1)	Storage Time	$I_{CP} = 4 \text{ A}, I_{B1} (\text{end}) = 0.8 \text{ A}$ $f_H = 15.75 \text{ kHz}$	—	7.5	11	μs
	Fall Time		—	0.3	0.6	

Fig.1 SWITCHING TIME TEST CIRCUIT

