

9097250 TOSHIBA (DISCRETE/OPTO)

56C 07966 D 7-33-13

SILICON NPN TRIPLE DIFFUSED MESA TYPE

2SD1428

COLOR TV HORIZONTAL OUTPUT APPLICATIONS.

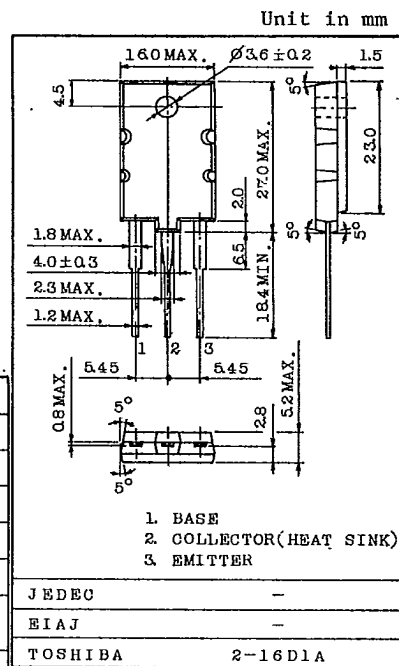
FEATURES:

- High Voltage : $V_{CBO}=1500V$
- Low Saturation Voltage : $V_{CE(sat)}=5V(\text{Max.})$ ($I_C=5A$, $I_B=1A$)
- High Speed : $t_f=1.0\mu s(\text{Max.})$
- Built-in Damper Type
- Glass Passivated Collector-Base Junction

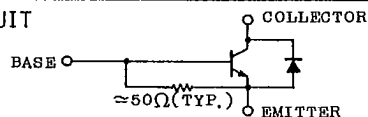
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MAXIMUM RATINGS ($T_c=25^\circ C$)

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	I_C	6	A
Emitter Current	I_E	-6	A
Collector Power Dissipation ($T_c=25^\circ C$)	P_C	80	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55~150	$^\circ C$



EQUIVALENT CIRCUIT

ELECTRICAL CHARACTERISTICS ($T_c=25^\circ C$)

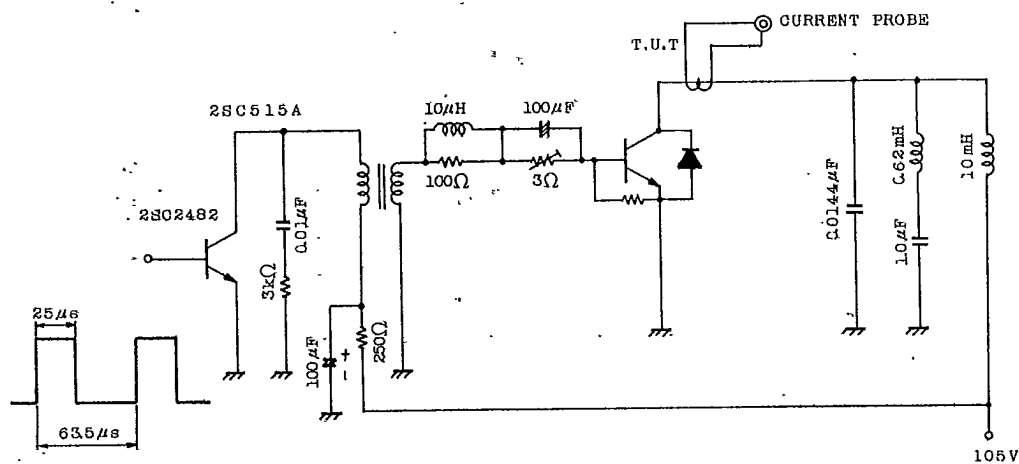
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB}=500V$, $I_E=0$	-	-	10	μA
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=200mA$, $I_C=0$	5	-	-	V
DC Current Gain	h_{FE}	$V_{CE}=5V$, $I_C=1A$	8	12	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=5A$, $I_B=1A$	-	3	5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=5A$, $I_B=1A$	-	-	1.5	V
Forward Voltage (Damper Diode)	$-V_F$	$I_F=6A$	-	1.6	2.0	V
Transition Frequency	f_T	$V_{CE}=10V$, $I_C=0.1A$	-	3	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$, $I_E=0$, $f=1MHz$	-	165	-	pF
Fall Time (Fig.)	t_f	$I_{CP}=5A$, $I_{B1}(\text{end})=1A$	-	0.5	1.0	μs

TOSHIBA CORPORATION

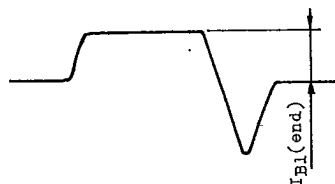
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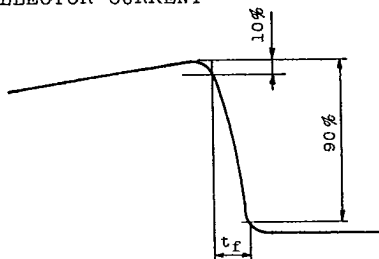
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2SD1428Fig. t_f TEST CIRCUIT

BASE CURRENT



COLLECTOR CURRENT



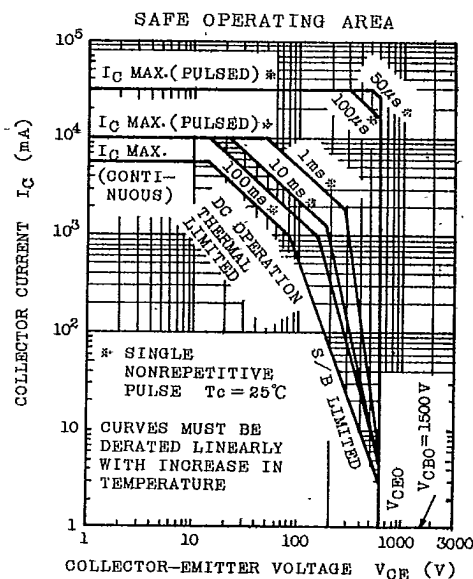
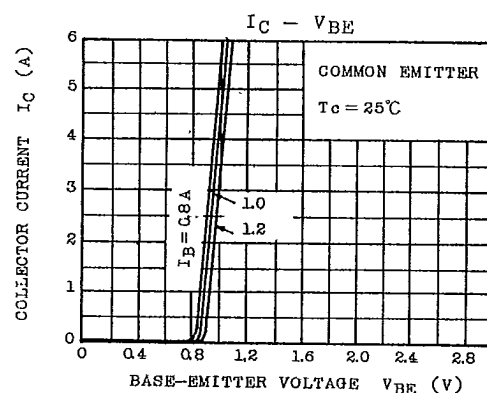
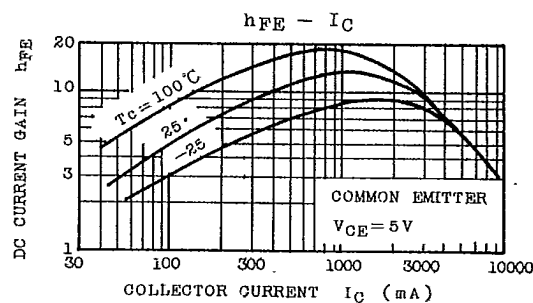
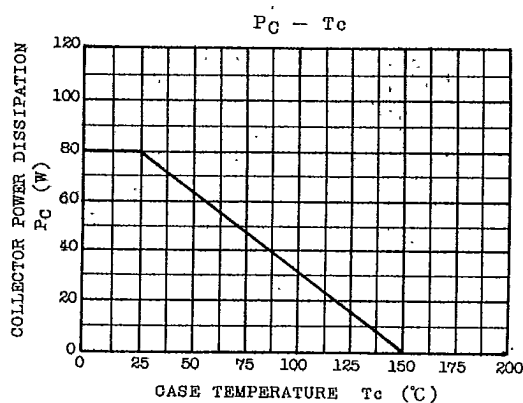
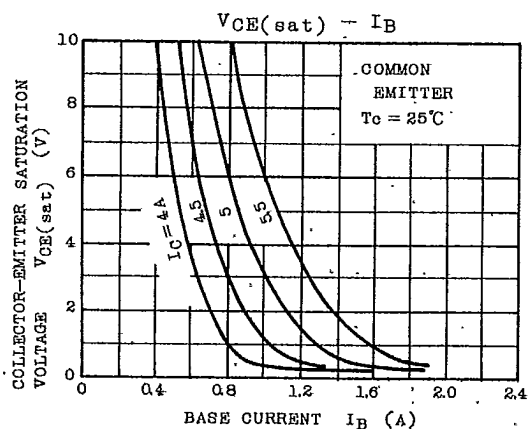
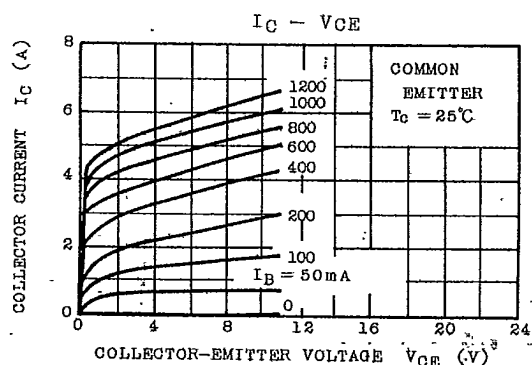
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