2SD819

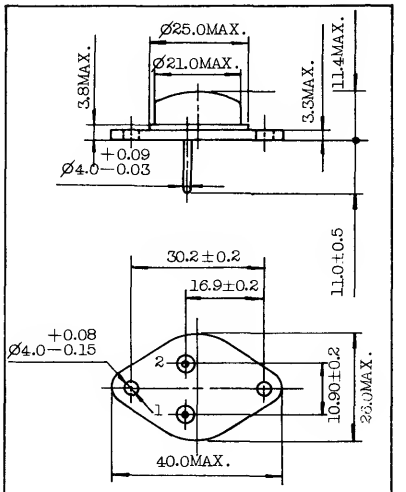
SILICON NPN TRIPLE DIFFUSED MESA TYPE

COLOR TV HORIZONTAL OUTPUT APPLICATIONS.

FEATURES:

- High Voltage : V_{CBO}=1500V
- Low Saturation Voltage : $V_{CE(sat)}$=4V (Typ.) (I_C=3A, I_B=0.8A)
- High Speed : t_f =1.0μs (Max.) (I_{CP}=3A, $I_{B1(end)}$=0.8A)
- Glass Passivated Collector-Base Junction.

Unit in mm



1. BASE
2. EMITTER
COLLECTOR (CASE)

JEDEC	TO − 3
EIAJ	TC − 3, TB − 3
TOSHIBA	2 − 21B1A

Mounting kit No. AC42C
Weight : 17g

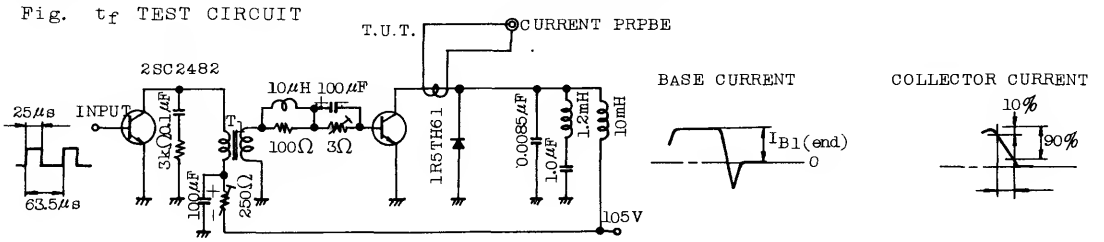
MAXIMUM RATINGS (Ta=25°C)

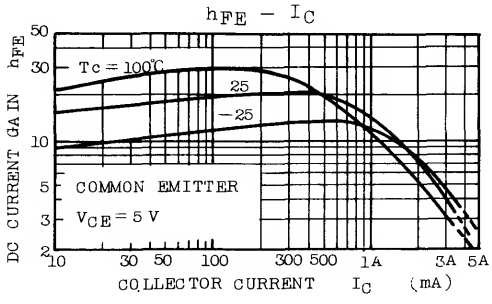
CHARACTERISTICS	SYMBOL	RATING	UNIT
Collector Base Voltage	V_{CBO}	1500	V
Collector Emitter Voltage	V_{CEO}	600	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	3.5	A
Emitter Current	I_E	-3.5	A
Collector Power Dissipation (Tc=25°C)	P_C	50	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-65 ∿ 150	°C

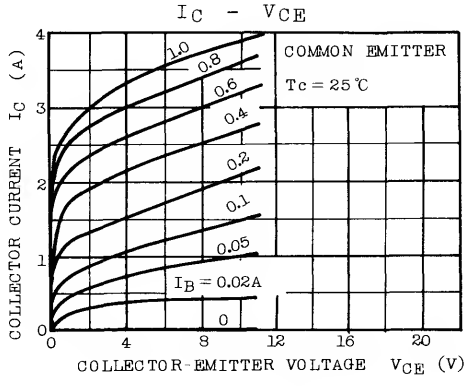
ELECTRICAL CHARACTERISTICS (Ta=25°C)

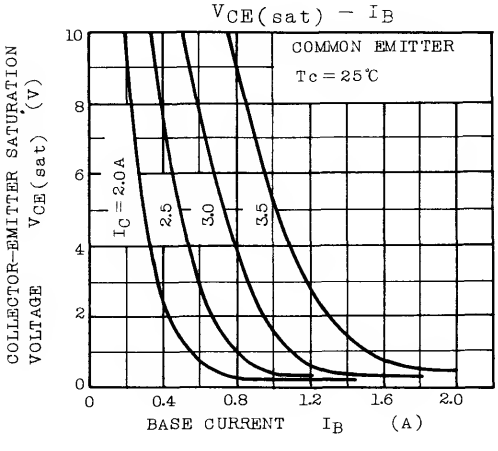
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=500V, I_E=0	-	-	10	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=5V, I_C=0	-	-	1	mA
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=0.5A	8	20	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=3A, I_B=0.8A	-	4	8	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=3A, I_B=0.8A	-	-	1.5	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	-	95	-	pF
Fall Time	t_f	I_{CP}=3A, $I_{B1(end)}$=0.8A(Fig.)	-	0.5	1.0	μs

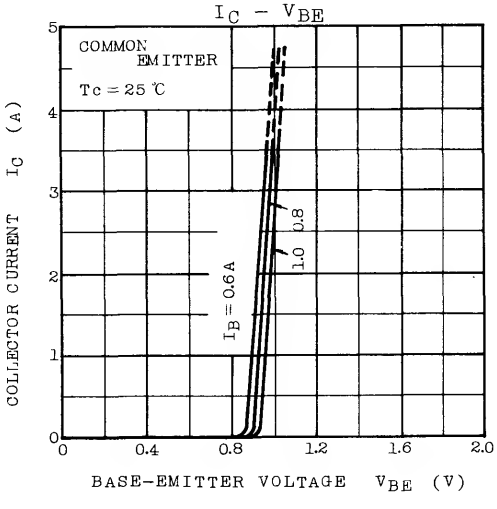
Fig. t_f TEST CIRCUIT

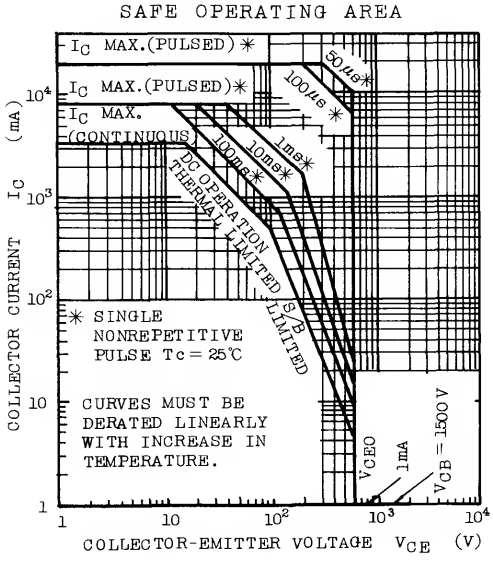


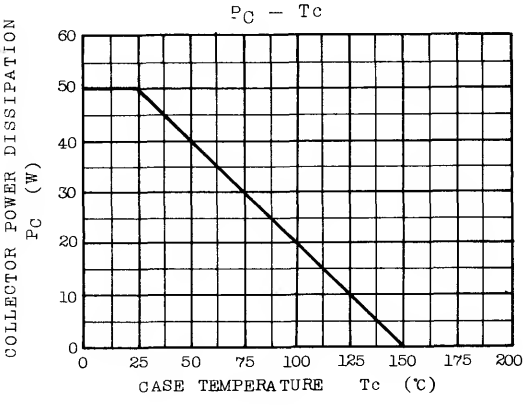

hFE – IC
DC CURRENT GAIN hFE
Tc = 100℃
25
−25
COMMON EMITTER
VCE = 5 V
COLLECTOR CURRENT IC (mA)


IC – VCE
COLLECTOR CURRENT IC (A)
COMMON EMITTER
Tc = 25℃
1.0
0.8
0.6
0.4
0.2
0.1
0.05
IB = 0.02A
0
COLLECTOR-EMITTER VOLTAGE VCE (V)


VCE(sat) – IB
COLLECTOR-EMITTER SATURATION VOLTAGE VCE(sat) (V)
COMMON EMITTER
Tc = 25℃
IC = 2.0A
2.5
3.0
3.5
BASE CURRENT IB (A)


IC – VBE
COLLECTOR CURRENT IC (A)
COMMON EMITTER
Tc = 25 ℃
IB = 0.6A
0.8
1.0
BASE-EMITTER VOLTAGE VBE (V)


SAFE OPERATING AREA
IC MAX.(PULSED)*
IC MAX.(PULSED)*
IC MAX. (CONTINUOUS)
50μs*
100μs*
1ms*
10ms*
100ms*
DC OPERATION
THERMAL LIMITED
S/B LIMITED
* SINGLE NONREPETITIVE PULSE Tc = 25℃
CURVES MUST BE DERATED LINEARLY WITH INCREASE IN TEMPERATURE.
VCEO
1mA
VCB = 1500 V
COLLECTOR CURRENT IC (mA)
COLLECTOR-EMITTER VOLTAGE VCE (V)


PC – Tc
COLLECTOR POWER DISSIPATION PC (W)
CASE TEMPERATURE Tc (℃)