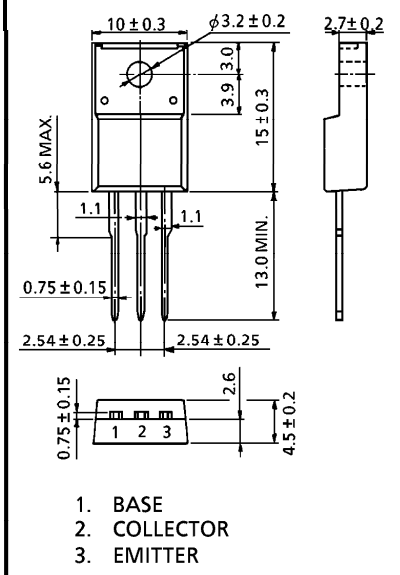
2SD1409A

IGNITER APPLICATIONS.

HIGH VOLTAGE SWITCHING APPLICATIONS.

INDUSTRIAL APPLICATIONS

Unit in mm



JEDEC	—
EIAJ	SC-67
TOSHIBA	2-10R1A

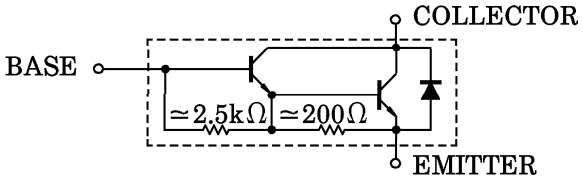
Weight : 1.7g

- High DC Current Gain : h_{FE} = 600 (Min.) (V_{CE} = 2V, I_C = 2A)
- Monolithic Construction with Built-In Base-Emitter Shunt Resistor.

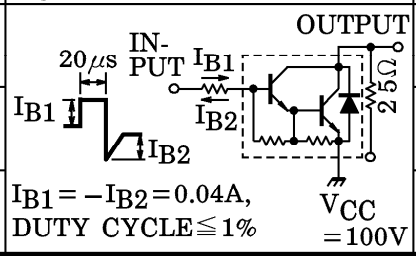
MAXIMUM RATINGS (Ta = 25°C)

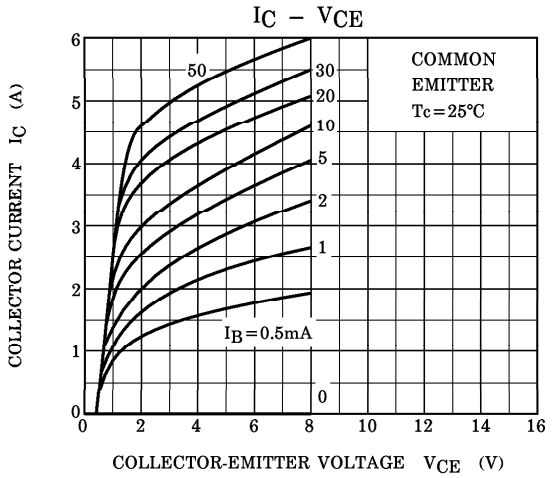
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	600	V
Collector-Emitter Voltage		V_{CEO}	400	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	6	A
Base Current		I_B	1	A
Collector Power Dissipation	Ta = 25°C	P_C	2.0	W
	Tc = 25°C		25	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

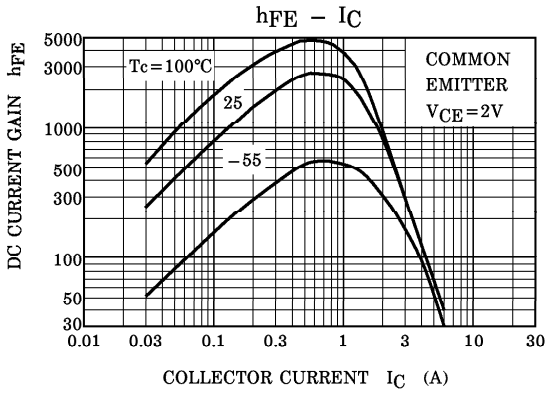
EQUIVALENT CIRCUIT

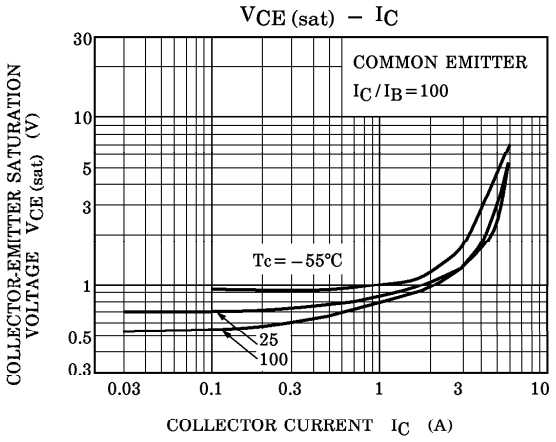


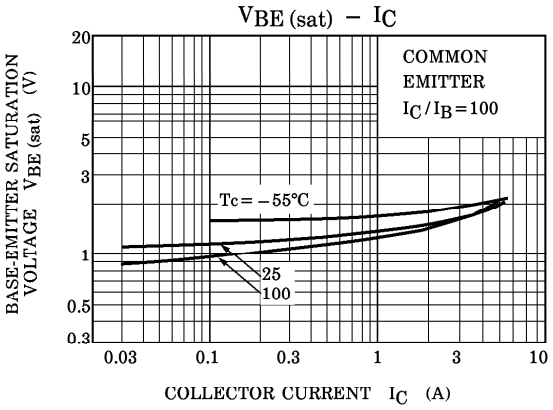
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

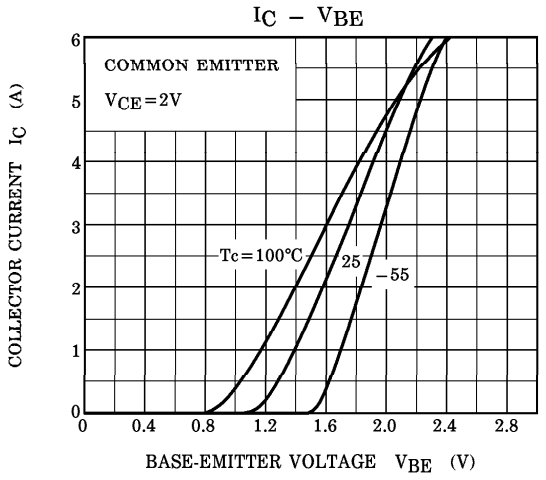
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB}=600V$, $I_E=0$	—	—	0.5	mA
Emitter Cut-off Current		I_{EBO}	$V_{EB}=5V$, $I_C=0$	—	—	3	mA
Collector-Emitter Breakdown Voltage		$V_{(BR)CBO}$	$I_C=10mA$, $I_B=0$	400	—	—	V
DC Current Gain		h_{FE} (1)	$V_{CE}=2V$, $I_C=2A$	600	—	—	
		h_{FE} (2)	$V_{CE}=2V$, $I_C=4A$	100	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C=4A$, $I_B=0.04A$	—	—	2.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C=4A$, $I_B=0.04A$	—	—	2.5	V
Emitter-Collector Forward Voltage		V_{ECF}	$I_E=4A$, $I_B=0$	—	—	3.0	V
Collector Output Capacitance		C_{ob}	$V_{CB}=50V$, $I_E=0$, f=1MHz	—	35	—	pF
Switching Time	Turn-on Time	t_{on}	 $I_{B1}=-I_{B2}=0.04A$, DUTY CYCLE≦1%	—	1	—	μs
	Storage Time	t_{stg}		—	8	—	
	Fall Time	t_f		—	5	—	

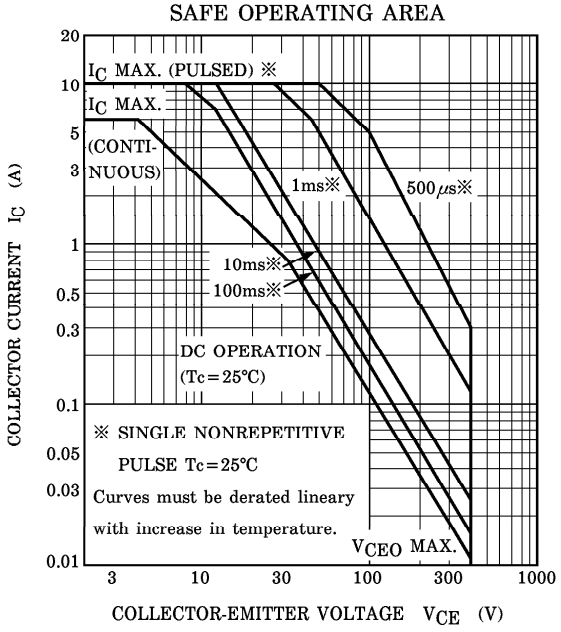

IC – VCE
COMMON EMITTER
Tc=25°C
50
30
20
10
5
2
1
0
IB=0.5mA
COLLECTOR CURRENT IC (A)
COLLECTOR-EMITTER VOLTAGE VCE (V)


hFE – IC
COMMON EMITTER
VCE=2V
Tc=100°C
25
–55
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (A)


VCE (sat) – IC
COMMON EMITTER
IC/IB=100
Tc=–55°C
25
100
COLLECTOR-EMITTER SATURATION VOLTAGE VCE (sat) (V)
COLLECTOR CURRENT IC (A)


VBE (sat) – IC
COMMON EMITTER
IC/IB=100
Tc=–55°C
25
100
BASE-EMITTER SATURATION VOLTAGE VBE (sat) (V)
COLLECTOR CURRENT IC (A)


IC – VBE
COMMON EMITTER
VCE=2V
Tc=100°C
25
–55
COLLECTOR CURRENT IC (A)
BASE-EMITTER VOLTAGE VBE (V)


SAFE OPERATING AREA
IC MAX. (PULSED) ※
IC MAX.
(CONTI-
NUOUS)
1ms※
500μs※
10ms※
100ms※
DC OPERATION
(Tc=25°C)
※ SINGLE NONREPETITIVE
PULSE Tc=25°C
Curves must be derated lineary
with increase in temperature.
VCEO MAX.
COLLECTOR CURRENT IC (A)
COLLECTOR-EMITTER VOLTAGE VCE (V)