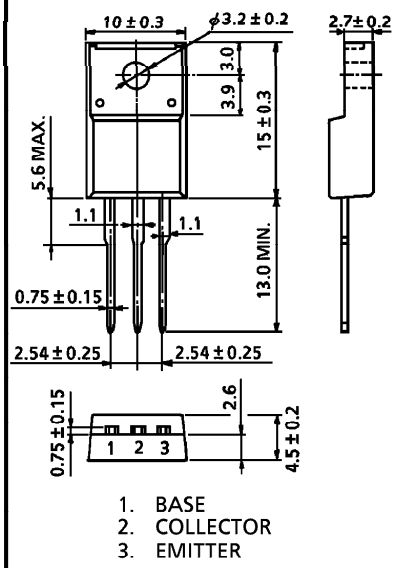
2SD2604

HIGH POWER SWITCHING APPLICATIONS

HAMMER DRIVE, PULSE MOTOR DRIVE APPLICATIONS

- High DC Current Gain : $h_{FE}=2000$ (Min.)
- Low Saturation Voltage : $V_{CE\,(sat)}=1.5V$ (Max.)

Unit in mm

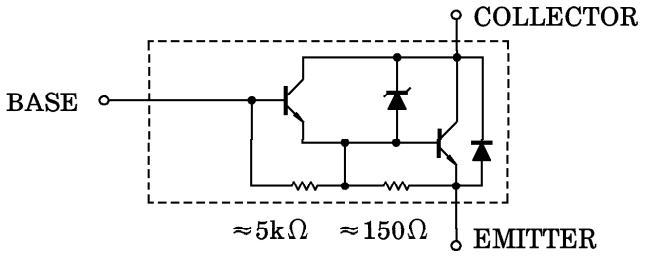


JEDEC	—
EIAJ	SC-67
TOSHIBA	2-10R1A

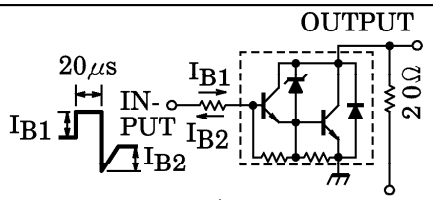
MAXIMUM RATINGS (Ta = 25°C)

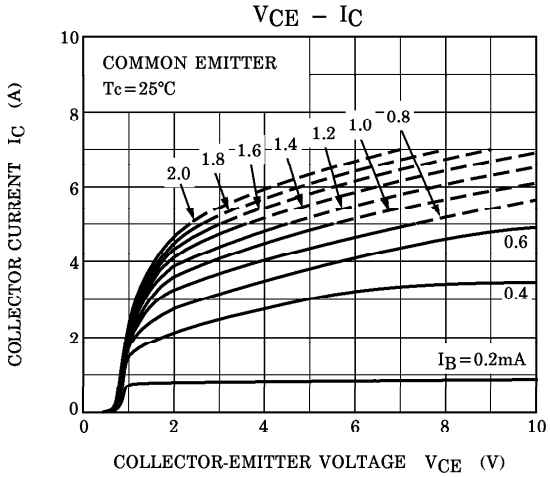
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	95	V
Collector-Emitter Voltage		V_{CEO}	110±15	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	5	A
	Pulse	I_{CP}	10	A
Base Current		I_B	0.7	A
Collector Power Dissipation	Ta=25°C	P_C	2.0	W
	Tc=25°C		20	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

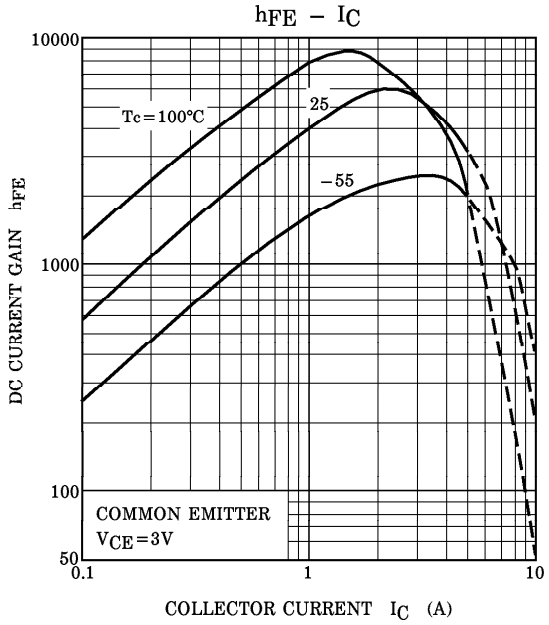
EQUIVALENT CIRCUIT

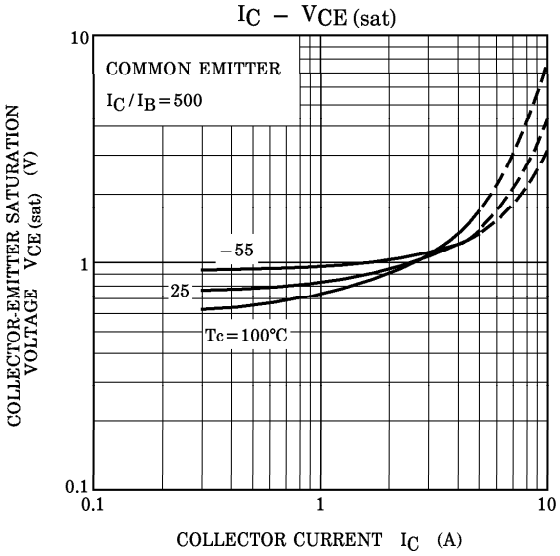


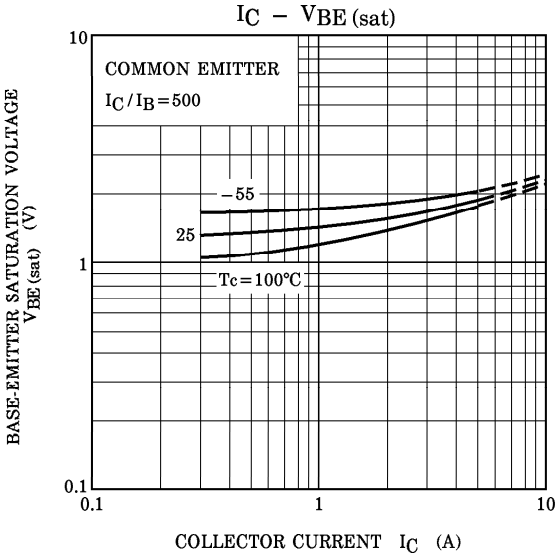
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB}=90V$, $I_E=0$	—	—	100	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB}=6V$, $I_C=0$	0.75	—	3.0	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C=10mA$, $I_B=0$	95	110	125	V
DC Current Gain		h_{FE} (1)	$V_{CE}=3V$, $I_C=2A$	2000	—	15000	
		h_{FE} (2)	$V_{CE}=3V$, $I_C=5A$	1000	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C=2A$, $I_B=4mA$	—	0.9	1.5	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C=2A$, $I_B=4mA$	—	1.5	2.5	V
Switching Time	Turn-on Time	t_{on}	 $I_{B1}=-I_{B2}=4mA$ DUTY CYCLE≦1% $V_{CC}\fallingdotseq 40V$	—	0.5	—	μs
	Storage Time	t_{stg}		—	5.0	—	
	Fall Time	t_f		—	0.7	—	


VCE – IC
COMMON EMITTER
Tc=25°C
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
IB=0.2mA
COLLECTOR CURRENT IC (A)
COLLECTOR-EMITTER VOLTAGE VCE (V)
0
2
4
6
8
10


hFE – IC
Tc=100°C
25
–55
COMMON EMITTER
VCE=3V
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (A)
10000
1000
100
50
0.1
1
10


IC – VCE (sat)
COMMON EMITTER
IC/IB=500
–55
25
Tc=100°C
COLLECTOR-EMITTER SATURATION VOLTAGE VCE (sat) (V)
COLLECTOR CURRENT IC (A)
10
1
0.1
0.1
1
10


IC – VBE (sat)
COMMON EMITTER
IC/IB=500
–55
25
Tc=100°C
BASE-EMITTER SATURATION VOLTAGE VBE (sat) (V)
COLLECTOR CURRENT IC (A)
10
1
0.1
0.1
1
10