2SD2092

SWITCHING APPLICATIONS

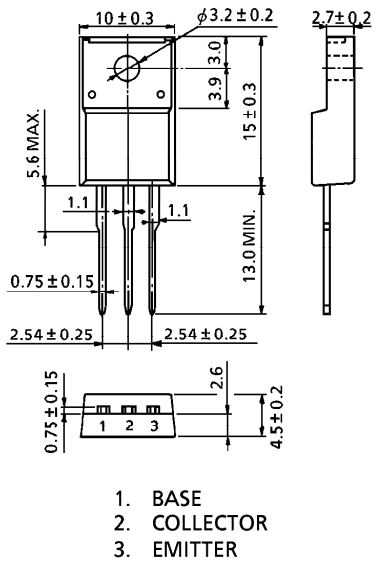
LAMP, SOLENOID DRIVE APPLICATIONS

- High DC Current Gain : $h_{FE\,(1)}$ = 500~1500
- Low Collector Saturation Voltage
  : $V_{CE\,(sat)}$ = 0.3V (Max.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	100	V
Collector-Emitter Voltage		V_{CEO}	100	V
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current	DC	I_C	3	A
	Pulse	I_{CP}	5	
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

Unit in mm

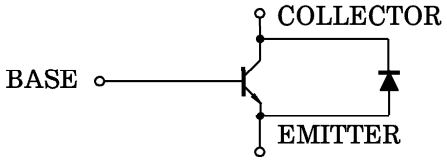


1. BASE
2. COLLECTOR
3. EMITTER

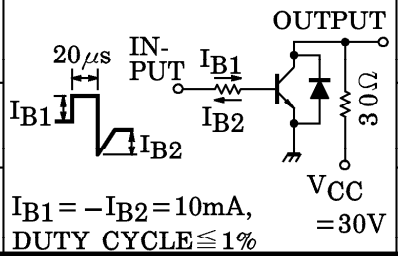
JEDEC	—
EIAJ	SC-67
TOSHIBA	2-10R1A

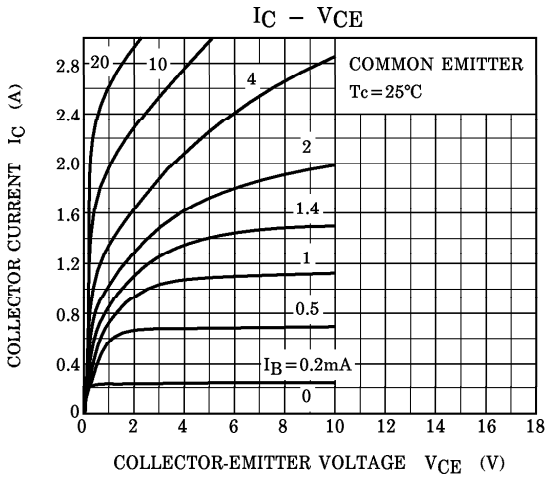
Weight : 1.7g (Typ.)

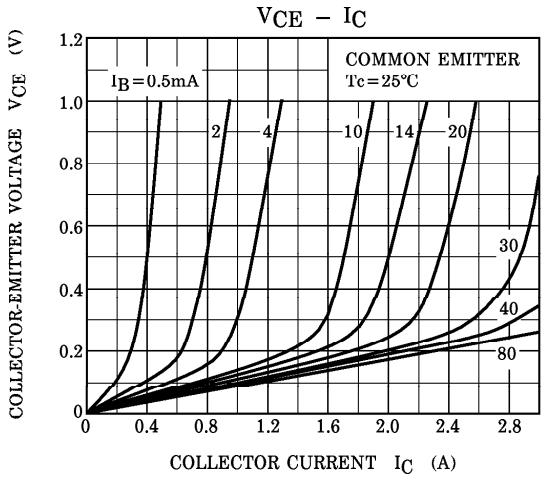
EQUIVALENT CIRCUIT

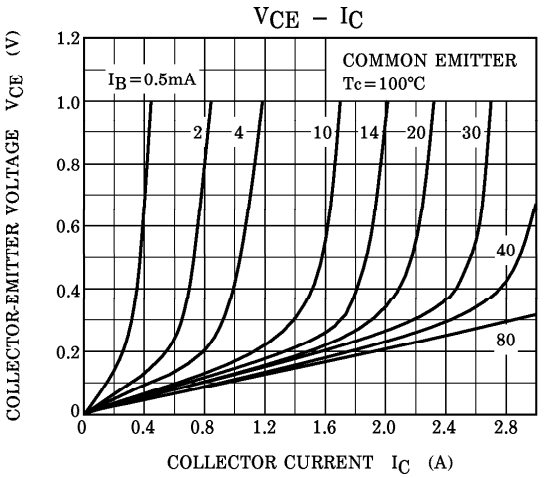


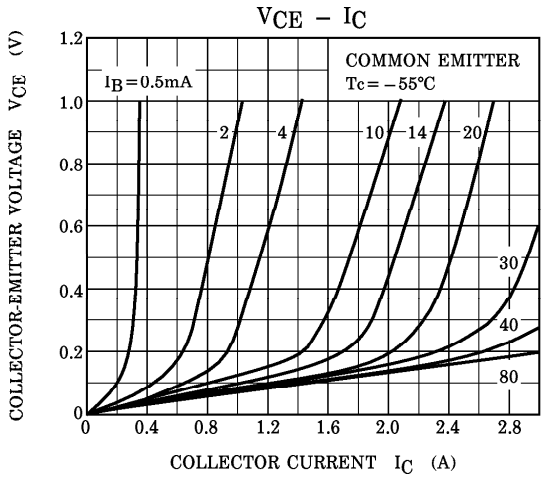
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

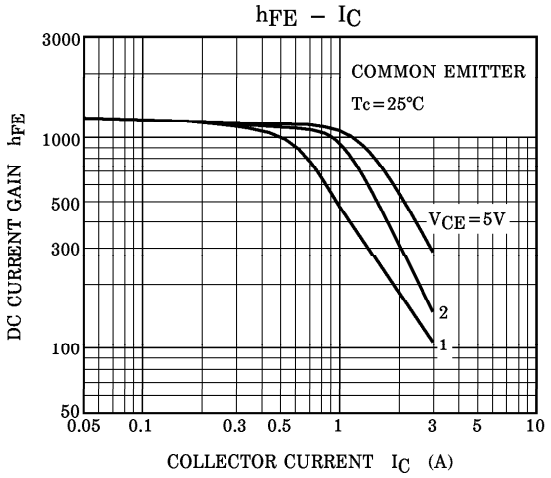
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB}=100V$, $I_E=0$	—	—	10	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB}=7V$, $I_C=0$	—	—	10	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C=50mA$, $I_B=0$	100	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE}=1V$, $I_C=0.5A$	500	—	1500	
		$h_{FE(2)}$	$V_{CE}=1V$, $I_C=1A$	150	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C=1A$, $I_B=10mA$	—	—	0.3	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C=1A$, $I_B=10mA$	—	—	1.2	V
Collector-Emitter Forward Voltage		V_{ECF}	$I_E=1A$, $I_B=0$	—	—	2.0	V
Transition Frequency		f_T	$V_{CE}=5V$, $I_C=0.5A$	—	140	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB}=10V$, $I_E=0$, f=1MHz	—	30	—	pF
Switching Time	Turn-on Time	t_{on}	 $I_{B1}=-I_{B2}=10mA$, DUTY CYCLE≦1%	—	0.5	—	μs
	Storage Time	t_{stg}		—	5	—	
	Fall Time	t_f		—	0.7	—	

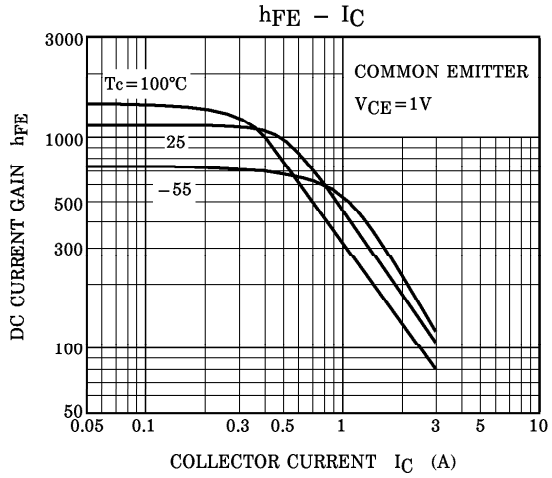

IC – VCE
COMMON EMITTER
Tc=25°C
IB=0.2mA
COLLECTOR CURRENT IC (A)
COLLECTOR-EMITTER VOLTAGE VCE (V)


VCE – IC
COMMON EMITTER
Tc=25°C
IB=0.5mA
COLLECTOR-EMITTER VOLTAGE VCE (V)
COLLECTOR CURRENT IC (A)


VCE – IC
COMMON EMITTER
Tc=100°C
IB=0.5mA
COLLECTOR-EMITTER VOLTAGE VCE (V)
COLLECTOR CURRENT IC (A)


VCE – IC
COMMON EMITTER
Tc= –55°C
IB=0.5mA
COLLECTOR-EMITTER VOLTAGE VCE (V)
COLLECTOR CURRENT IC (A)


hFE – IC
COMMON EMITTER
Tc=25°C
VCE=5V
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (A)


hFE – IC
COMMON EMITTER
VCE=1V
Tc=100°C
25
–55
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (A)