

TOSHIBA

2SD633, 2SD635

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

2SD633, 2SD635

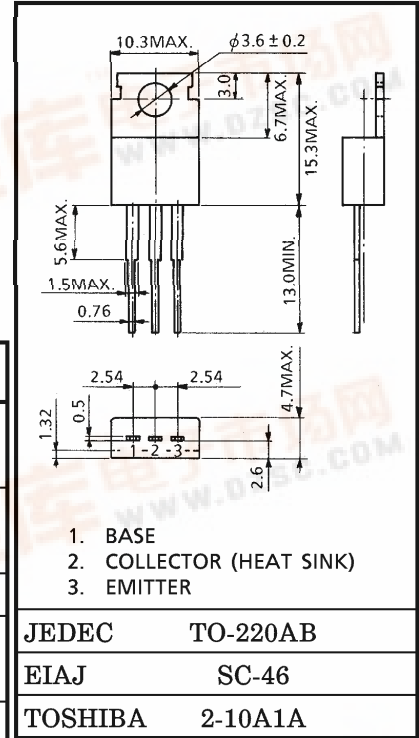
HIGH POWER SWITCHING APPLICATIONS

INDUSTRIAL APPLICATIONS

HAMMER DRIVE, PULSE MOTOR DRIVE APPLICATIONS

Unit in mm

- High DC Current Gain : $h_{FE} = 2000$ (Min.)
- Low Saturation Voltage : $V_{CE(sat)} = 1.5V$ (Max.)
- Complementary to 2SB673 and 2SB675.



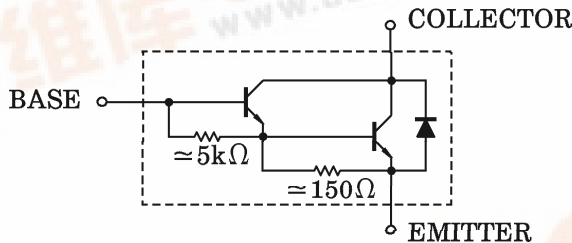
MAXIMUM RATINGS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	100	V
		60	
Collector-Emitter Voltage	V_{CEO}	100	V
		60	
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	7	A
	I_{CP}		
Base Current	I_B	0.7	A
Collector Power Dissipation ($T_c = 25^\circ C$)	P_C	40	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55~150	$^\circ C$

Weight : 1.9g (Typ.)

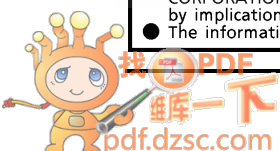
Mounting kit No. AC75

EQUIVALENT CIRCUIT



961001EAA2

- TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.



ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	2SD633	I _{CB0}	V _{CB} = 100V, I _E = 0	—	—	100	μA	
	2SD635		V _{CB} = 60V, I _E = 0	—	—	100		
Emitter Cut-off Current		I _{EB0}	V _{EB} = 5V, I _C = 0	—	—	3.0	mA	
Collector-Emitter Breakdown Voltage	2SD633	V (BR) CEO	I _C = 50mA, I _B = 0	100	—	—	V	
	2SD635			60	—	—		
DC Current Gain			h _{FE} (1)	V _{CE} = 3V, I _C = 3A	2000	—	15000	
			h _{FE} (2)	V _{CE} = 3V, I _C = 7A	1000	—	—	
Collector-Emitter Saturation Voltage			V _{CE} (sat) (1)	I _C = 3A, I _B = 6mA	—	0.9	1.5	V
			V _{CE} (sat) (2)	I _C = 7A, I _B = 14mA	—	1.2	2.0	
Base-Emitter Saturation Voltage		V _{BE} (sat)	I _C = 3A, I _B = 6mA	—	1.5	2.5	V	
Switching Time	Turn-on Time	t _{on}		—	0.8	—	μs	
	Storage Time	t _{stg}		—	3.0	—		
	Fall Time	t _f		I _{B1} = -I _{B2} = 6mA, DUTY CYCLE ≤ 1%	—	2.5		—

