TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

2SD633, 2SD635

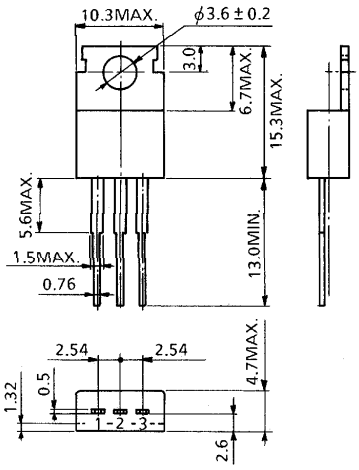
HIGH POWER SWITCHING APPLICATIONS

HAMMER DRIVE, PULSE MOTOR DRIVE APPLICATIONS

INDUSTRIAL APPLICATIONS

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

Unit in mm



1. BASE
2. COLLECTOR (HEAT SINK)
3. EMITTER

JEDEC	TO-220AB
EIAJ	SC-46
TOSHIBA	2-10A1A

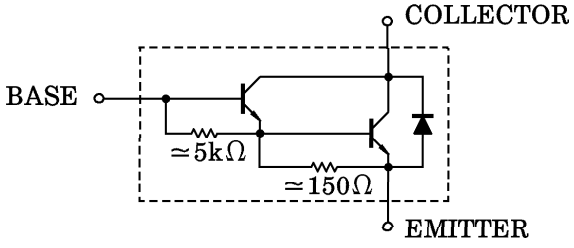
Weight : 1.9g (Typ.)

Mounting kit No. AC75

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	2SD633	V_{CBO}	100	V
	2SD635		60	
Collector-Emitter Voltage	2SD633	V_{CEO}	100	V
	2SD635		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 (Tc = 25°C)		P_C	40	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

EQUIVALENT CIRCUIT



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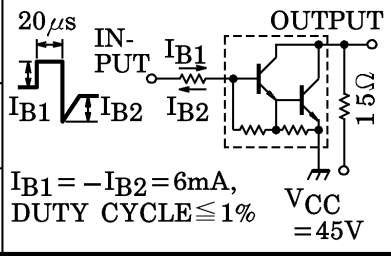
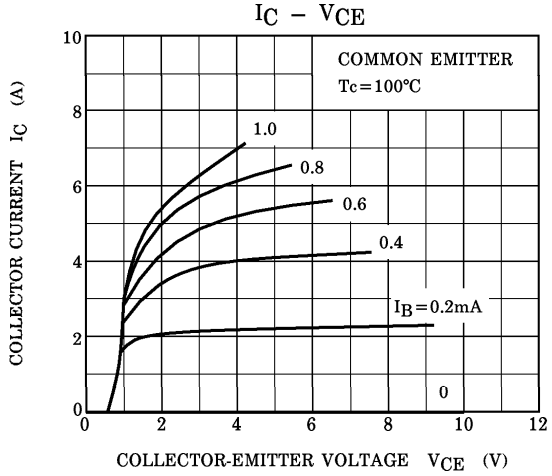
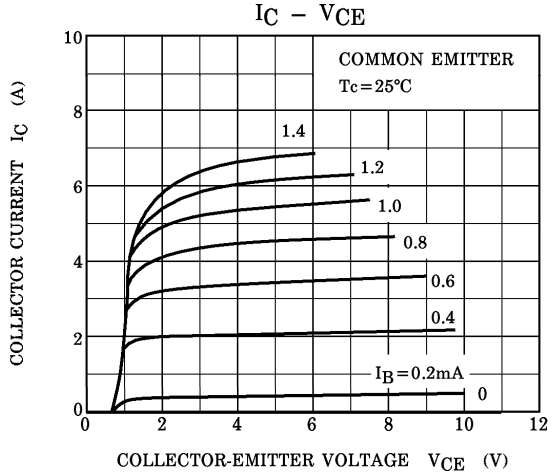
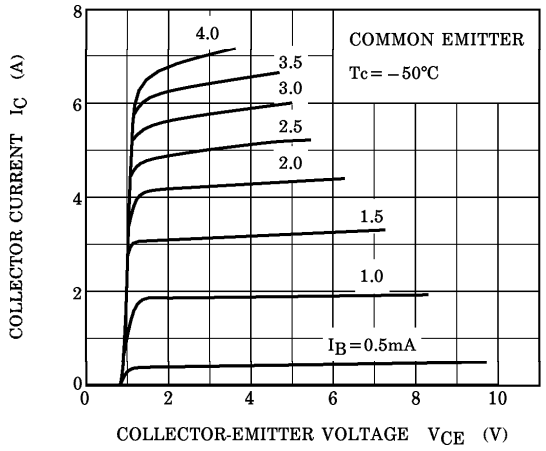
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	2SD633	I_{CBO}	V_{CB}=100V, I_E=0	—	—	100	μA
	2SD635		V_{CB}=60V, I_E=0	—	—	100	
Emitter Cut-off Current		I_{EBO}	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	—	

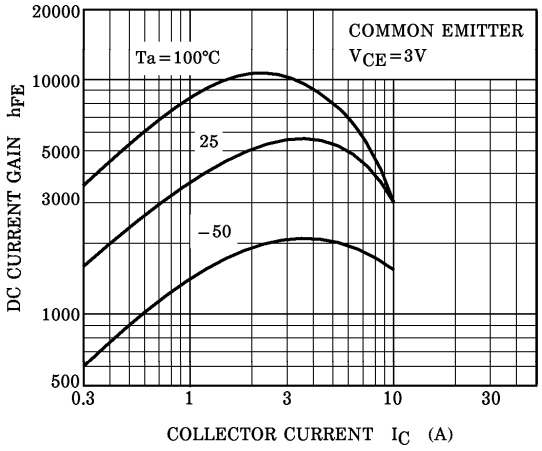




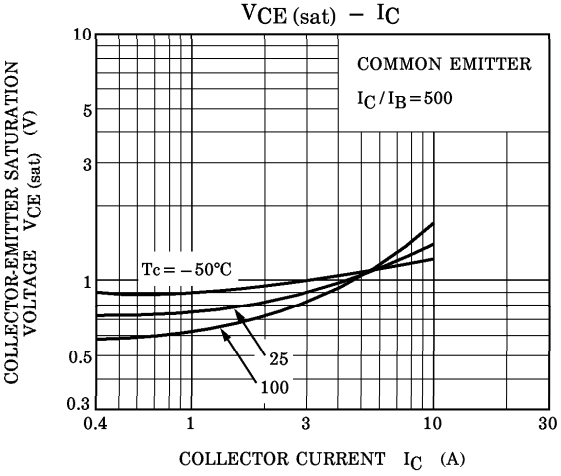
I_C – V_{CE}



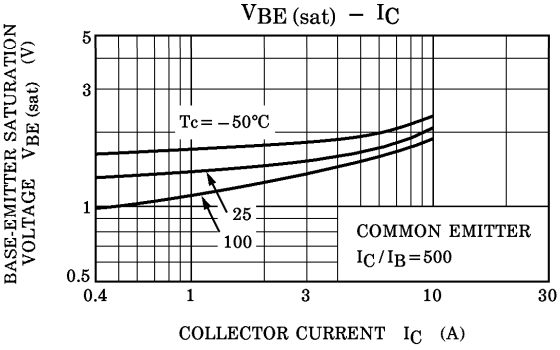
h_{FE} – I_C



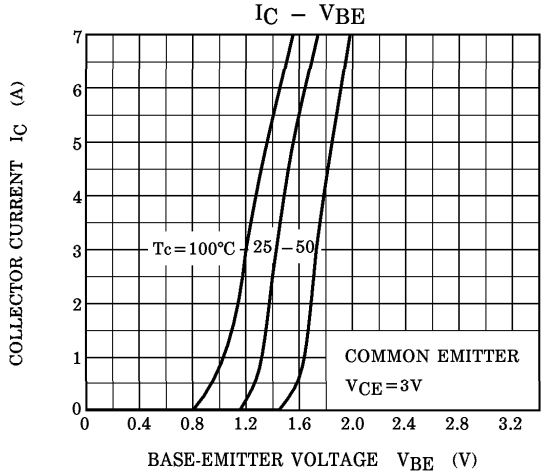
$V_{CE\,(sat)}$ – I_C



$V_{BE\,(sat)}$ – I_C



I_C – V_{BE}



SAFE OPERATING AREA