

9097250 TOSHIBA (DISCRETE/OPTO)
SILICON PNP EPITAXIAL TYPE (PCT PROCESS)
(DARLINGTON POWER)

56C 07345 U T-33-31

2SB678

LOW FREQUENCY MEDIUM POWER AMPLIFIER AND
MEDIUM SPEED SWITCHING APPLICATIONS.

PULSE MOTOR DRIVE, RELAY DRIVE AND HAMMER
DRIVE APPLICATIONS.

FEATURES :

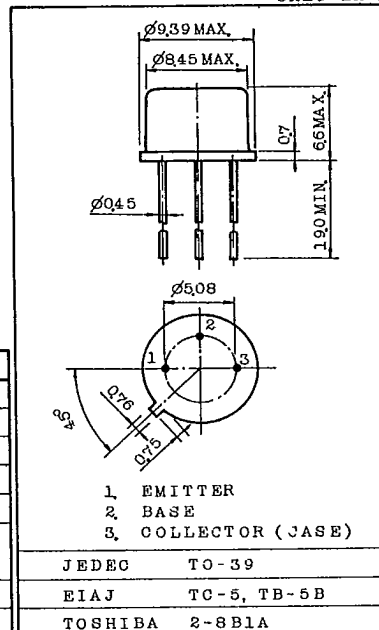
- High DC Current Gain : $h_{FE}(2)=1000(\text{Min.})$
($V_{CE}=-2V$, $I_C=-1A$)
- Low Saturation Voltage : $V_{CE}(\text{sat})=-1.5V(\text{Max.})$ ($I_C=-1A$)
- Complementary to 2SD688.

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	-100	V
Collector-Emitter Voltage	V_{CEO}	-100	V
Emitter-Base Voltage	V_{EB0}	-10	V
Collector Current	I_C	-1.5	A
Emitter Current	I_E	1.5	A
Collector Power Dissipation	P_C	0.8 8	W
		($T_a = 25^\circ\text{C}$) ($T_c = 25^\circ\text{C}$)	
Junction Temperature	T_j	175	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65~175	$^\circ\text{C}$

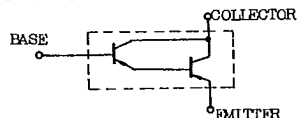
INDUSTRIAL APPLICATIONS

Unit in mm



Weight : 1.13g

EQUIVALENT CIRCUIT



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

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}	$V_{EB}=-10V$, $I_C=0$	-	-	-10	μA
Breakdown Voltage	Collector-Emitter	$V_{(BR)CEO}$	$I_C=-10mA$, $I_B=0$	-100	-	V
	Base-Emitter	$V_{(BR)EBO}$	$I_E=-5mA$, $I_C=0$	-10	-	V
DC Current Gain		$h_{FE}(1)$	$V_{CE}=-2V$, $I_C=-0.1A$	2000	-	
		$h_{FE}(2)$	$V_{CE}=-2V$, $I_C=-1A$	1000	-	
Saturation Voltage	Collector-Emitter	$V_{CE}(\text{sat})$	$I_C=-1A$, $I_B=-2mA$	-	-	-1.5
	Base-Emitter	$V_{BE}(\text{sat})$	$I_C=-1A$, $I_B=-2mA$	-	-	-2.5
Switching Time	Turn-on Time	t_{on}			0.3	-
	Storage Time	t_{stg}			2.0	-
	Fall Time	t_f			0.7	-

$I_{B1}=I_{B2}=2mA$
 $DUTY\ CYCLE \leq 1\%$
 $V_{CC}=-30V$

TOSHIBA CORPORATION