SILICON NPN EPITAXIAL TYPE (PCT PROCESS)
(DARLINGTON POWER)

2SD688

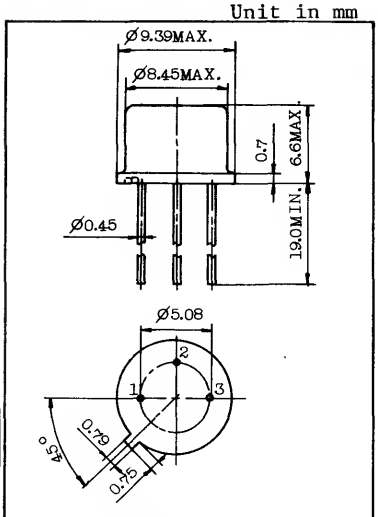
LOW FREQUENCY MEDIUM POWER AMPLIFIER AND MEDIUM SPEED SWITCHING APPLICATIONS.

PULSE MOTOR DRIVE, RELAY DRIVE AND HAMMER DRIVE APPLICATIONS.

FEATURES:

- High DC Current Gain
  : h_{FE}=1000 (Min.) (V_{CE}=2V, I_C=1A)
- Low Saturation Voltage
  : $V_{CE(sat)}$=1.5V (Max.) (I_C=1A)
- Complementary to 2SB678

Unit in mm



1. EMITTER
2. BASE
3. COLLECTOR(CASE)

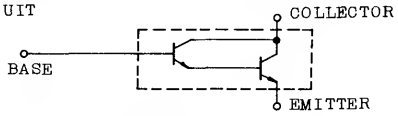
JEDEC	TO – 39
EIAJ	TC – 5, TB – 5B
TOSHIBA	2 – 8B1A

Weight : 1.13g

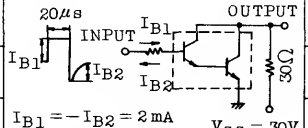
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	100	V
Collector-Emitter Voltage		V_{CEO}	100	V
Emitter-Base Voltage		V_{EBO}	10	V
Continuous Collector Current		I_C	1.5	A
Collector Power Dissipation	Ta=25°C	P_C	0.8	W
	Tc=25°C		8	W
Junction Temperature		T_j	175	°C
Storage Temperature Range		T_{stg}	-65~175	°C

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