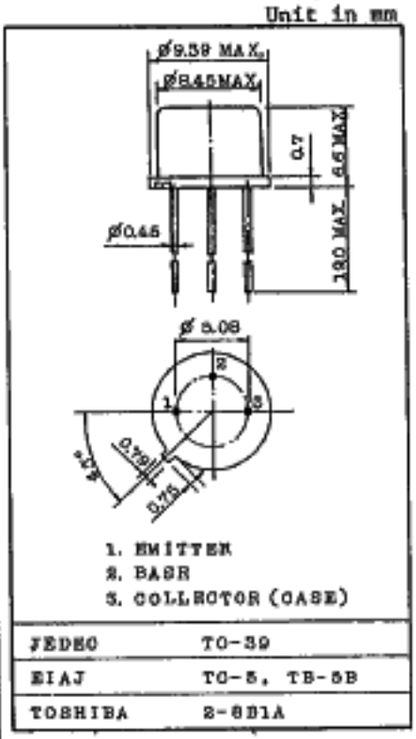
SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC108A
2SC109A

Unit in mm



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

JEDEC	TO-39
EIAJ	TO-5, TB-5B
TOSHIBA	2-5B1A

Weight : 1.14g

HIGH FREQUENCY AMPLIFIER APPLICATIONS.
HIGH SPEED SWITCHING APPLICATIONS.

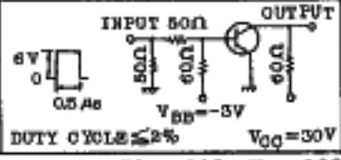
FEATURES:

- High Switching Speed: t_{stg}=60nS (Typ.)
- High Transition Frequency: f_T = 150MHz (Typ.)
- High Breakdown Voltage
  : V_{CBO}=90V (2SC108A)
- Low Collector Saturation Voltage
  : $V_{CE(sat)}$=0.4V(Max.) at I_C=200mA, I_B=20mA

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	2SC108A	V_{CBO}	90	V
	2SC109A		70	
Collector-Emitter Voltage	2SC108A	V_{CEO}	70	V
	2SC109A		50	
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	800	mA
Base Current		I_B	100	mA
Collector Power Dissipation		P_C	800	mW
Junction Temperature		T_j	175	°C
Storage Temperature Range		Tstg	-65~175	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	2SC108A	I_{CBO}	V_{CB}=80V, I_E=0	-	-	0.5	μA
	2SC109A		V_{CB}=60V, I_E=0				
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	-	-	1.0	μA
DC Current Gain		h_{FE} (Note)	V_{CE}=2V, I_C=200mA	40	-	240	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	I_C=200mA, I_B=20mA	-	0.2	0.4	V
	Base-Emitter	$V_{BE(sat)}$	I_C=200mA, I_B=20mA	-	0.8	1.0	
Transition Frequency		f_T	V_{CE}=10V, I_C=10mA	100	150	-	MHz
Collector Output Capacitance		Cob	V_{CB}=10V, I_E=0, f=1MHz	-	9	15	pF
Switching Time	Turn-on Time	t_{on}			30	70	ns
	Storage Time	t_{stg}		-	60	80	
	Fall Time	t_f		-	20	40	

Note : h_{FE} Classification R : 40 ~ 80, O : 70 ~ 140, Y : 120 ~ 240