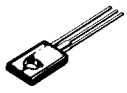
2SB559



2009A

PNP/NPN Epitaxial Planar Silicon Transistors

2SD439

Low Frequency Power Amp, Medium Speed Switching Applications

)372E

Features

- Large allowable collector dissipation and wide ASO.
- Low saturation voltage and good linearity of h_{FE}.
- Suited for use in output stage of low-voltge high-output (Po=2W/V_{CC}=4.5V) AF amp.

( ):2SB559

Absolute Maximum Ratings at Ta=25°C

				unit
Collector to Base Voltage	V_{CBO}		(-)20	V
Collector to Emitter Voltage	V_{CEO}		(-)18	V
Emitter to Base Voltage	V_{EBO}		(-)5	V
Collector Current	I_C		(-)1.2	A
Peak Collector Current	i_{cp}		(-)2.0	A
Collector Dissipation	P_C		1	W
		Tc=25°C	8	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

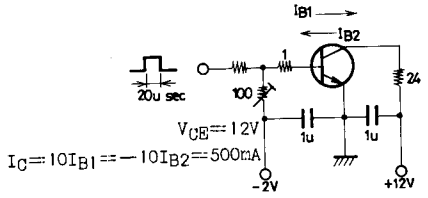
Electrical Characteristics at Ta=25°C

			min	typ	max	unit
C-B Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)10uA, I_E=0	(-)20			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	I_C=(-)1mA, R_{BE}=∞	(-)18			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	I_E=(-)10uA, I_C=0	(-)5			V
Collector Cutoff Current	I_{CBO}	V_{CB}=(-)15V, I_E=0			(-)1	uA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(-)4V, I_C=0			(-)1	uA
DC Current Gain	$h_{FE}(1)$	V_{CE}=(-)2V, I_C=(-)500mA	60*		320*	
	$H_{FE}(2)$	V_{CE}=(-)2V, I_C=(-)1.5A (Pulse)	(40)50			
Gain Bandwidth Product	f_T	V_{CE}=(-)10V, I_C=(-)50mA		150		MHz
Collector Capacitance	c_{ob}	V_{CB}=(-)10V, f=1MHz		(30)20		pF
C-E Saturation Voltage	$V_{CE(sat)}$	I_C=(-)1A, I_B=(-)50mA		(-0.35)0.25	(-0.7)0.5	V
B-E Saturation Voltage	$V_{BE(sat)}$	I_C=(-)500mA, I_B=(-)50mA		(-)0.85	(-)1.2	V
Turn-ON Time	t_{on}	See specified Test Circuit.		50		ns
Storage Time	t_{stg}	"		(60)70		ns
Fall Time	t_f	"		200		ns

* The 2SB559/2SD439 are classified by h_{FE} at 500mA.

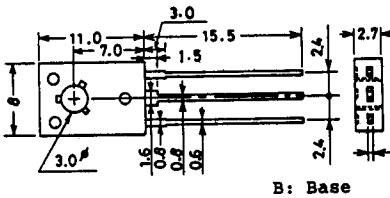
60	D	120	100	E	200	160	F	320

Switching Time Test Circuit



(For PNP, the polarity is reversed.)

Case Outline 2009A
(unit:mm)



JEDEC: TO-126

B: Base
C: Collecto
E: Emitter

For details, refer to the description of the 2SD439.