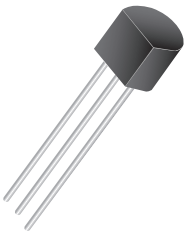
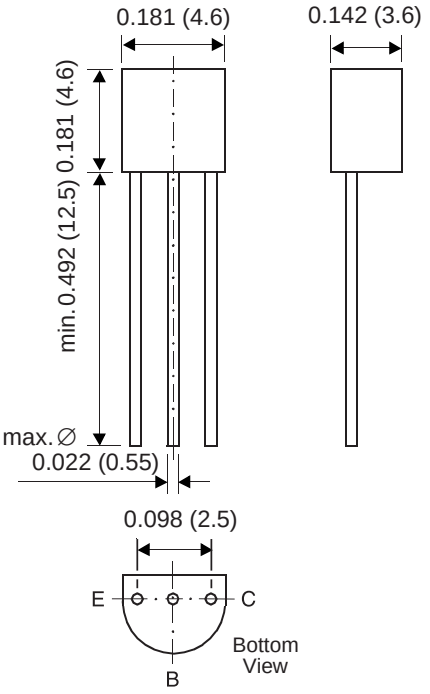
New Product

Vishay Semiconductors
formerly General Semiconductor

Small Signal Transistors (NPN)



TO-226AA (TO-92)



Dimensions in inches and (millimeters)

Features

- NPN Silicon Epitaxial Planar Transistors
- Complementary to GS9015
- Low noise pre-amplifier
- High h_{FE}

Mechanical Data

Case: TO-92 Plastic Package

Weight: approx. 0.18g

Packaging Codes/Options:

E6/Bulk-5K per container, 20K per box
E7/4K per Ammo mag., 20K per box

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	100	mA
Power Dissipation at T_{amb} = 25°C	P_{tot}	450(1)	mW
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	250(1)	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_S	–55 to +150	°C

Note:
(1) Valid provided that leads are kept at ambient temperature at a distance of 2mm from case

Electrical Characteristics (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
DC Current Gain — Current Gain Group A	h_{FE}	V_{CE} = 5V, I_C = 1mA	60	—	150	—
DC Current Gain — Current Gain Group B			100	—	300	
DC Current Gain — Current Gain Group C			200	—	600	
DC Current Gain — Current Gain Group D			400	—	1000	
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	45	—	—	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100µA, I_E = 0	50	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 100µA, I_C = 0	5	—	—	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 50V, I_E = 0	—	—	50	nA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 5V, I_C = 0	—	—	50	nA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 5mA	—	0.14	0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 100mA, I_B = 5mA	—	0.84	1.0	V
Base-Emitter ON Voltage	$V_{BE(on)}$	V_{CE} = 5V, I_C = 2mA	0.58	0.63	0.70	V
Output Capacitance	C_{OB}	V_{CB} = 10V, I_E = 0, f = 1 MHz	—	2.2	3.5	pF
Gain-Bandwidth Product	f_T	V_{CE} = 5V, I_C = 10mA	150	270	—	MHz
Noise Figure	NF	V_{CE} = 5V, I_C = 0.2mA, f = 1KHz, R_S = 2KΩ	—	0.9	10	dB