

3918590 GENERAL SEMICONDUCTOR

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T-33-09

**NPN**  
200,300V  
0.5 AMP SWITCHING

TO-66

**NPN SWITCHING POWER TRANSISTORS**

This unique series utilizes General Semiconductor Industries' C<sup>2</sup>R<sup>®</sup> process which describes a manufacturing technology that provides surface stabilization for high voltage operation and enhances long term reliability.

**\*MAXIMUM RATINGS (T<sub>C</sub> = 25°C unless otherwise noted.)**

RATING	SYMBOL	2N5660	2N5661	Unit
Collector-Base Voltage	V <sub>CB0</sub>	250	400	Volts
Collector-Emitter Voltage	V <sub>CE0</sub>	200	300	Volts
Emitter-Base Voltage	V <sub>EB0</sub>	6.0	6.0	Volts
Collector Current-Continuous	I <sub>C</sub>	1.0	1.0	Amps
Base Current-Continuous	I <sub>B</sub>	0.2	0.2	Amps
Total Power Dissipation@T <sub>C</sub> = 100°C	P <sub>D</sub>	20	20	Watts
Junction to Case Thermal Resistance	R <sub>θJC</sub>	5.0	5.0	°C/W
Operating and Storage Junction Temperature Range	T <sub>J(oper)</sub> T <sub>stg</sub>	-65 to +200	-65 to +200	°C

**\*ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise noted.)**

SYMBOL	CONDITIONS	2N5660		2N5661		Unit
		Min	Max	Min	Max	
V <sub>CB0</sub>	I <sub>C</sub> = 1.0mA	250	—	400	—	Volts
V <sub>CE0</sub>	I <sub>C</sub> = 20mA	200	—	300	—	Volts
V <sub>CEB</sub>	I <sub>C</sub> = 10mA, R <sub>BE</sub> = 100Ω	250	—	400	—	Volts
I <sub>EB0</sub>	V <sub>EB</sub> = 6.0V	—	10	—	10	μA
I <sub>CE0</sub>	V <sub>CE</sub> = 400V	—	1.0	—	1.0	μA
I <sub>CE5</sub>	V <sub>CE</sub> = 250V	—	1.0	—	1.0	μA
h <sub>FE</sub> †	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 1.0A	15	—	15	—	
h <sub>FE</sub> †	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 500mA	40	120	25	75	
V <sub>CE(sat)</sub> †	I <sub>C</sub> = 1.0A, I <sub>B</sub> = 0.1A	—	0.4	—	0.4	Volts
V <sub>BE(sat)</sub> †	I <sub>C</sub> = 1.0A, I <sub>B</sub> = 0.1A	—	1.2	—	1.2	Volts
f <sub>T</sub>	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 0.1A, f = 10MHz	20	—	20	—	MHz
C <sub>ob</sub>	V <sub>CB</sub> = 10V, f = 1MHz	—	60	—	60	pF
<b>SWITCHING</b>						
t <sub>on</sub>	Resistive Load V <sub>CC</sub> = 100V I <sub>C</sub> = 500mA I <sub>B1</sub> = I <sub>B2</sub> = 15mA t <sub>p</sub> = 10μs	—	0.25	—	—	μs
t <sub>off</sub>		—	0.85	—	—	μs
t <sub>on</sub>	Resistive Load V <sub>CC</sub> = 100V I <sub>C</sub> = 500mA I <sub>B1</sub> = I <sub>B2</sub> = 25mA t <sub>p</sub> = 10μs	—	—	—	0.25	μs
t <sub>off</sub>		—	—	—	1.2	μs

† JEDEC registered data. † Pulse conditions. Width = 300μs, Duty Cycle ≤ 2% (measured using Kelvin connections).