



# SOLID STATE DEVICES, INC.

14830 Valley View Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-7855 \* Fax: (562) 404-1773  
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## DESIGNER'S DATA SHEET

### Part Number /Ordering Information <sup>1/</sup>

**SSG60N60 N TX**

**Screening <sup>2/</sup>:** \_ = Not Screened  
 TX = TX Level  
 TXV = TXV Level  
 S = Space Level

**Lead Bend <sup>3/4/</sup>:** \_ = Straight  
 UB = Up Bend  
 DB = Down Bend

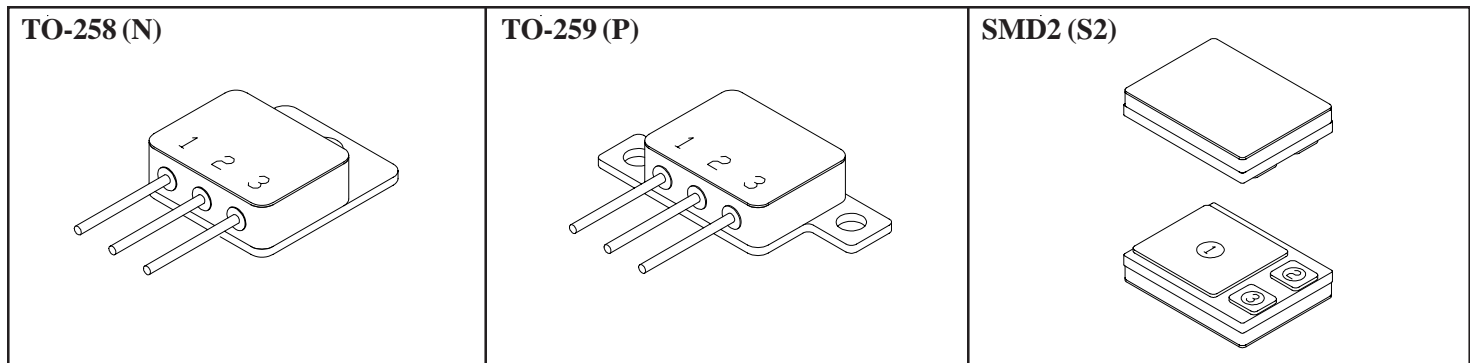
**Package: <sup>3/</sup>** N = TO-258, Isolated  
 P = TO-259, Isolated  
 S2 = SMD2

## SSG60N60 SERIES

## 85 AMP 600 VOLTS FAST POWER IGBT

- APPLICATION NOTES:**
- 600V IGBT Technology
  - Positive Temperature Coefficient for Ease of Paralleling
  - High Current Switching for Motor Drives and Inverters
  - Low Saturation Voltage at High Currents.
  - Low Switching Losses.
  - High Short Circuit Capability
  - MOS Input, Voltage Controlled.
  - Hermetic Sealed Construction.
  - TX, TXV, and S-Level Screening Available.

MAXIMUM RATINGS	SYMBOL	VALUE	UNITS
Collector-Emitter Voltage	$V_{CEO}$	600	Volts
Continuous Collector Current @ $T_C = 25^\circ C$ Average Diode Current @ $T_C = 100^\circ C$	$I_C$	85 60	Amps
Peak Collector Current	$I_{C(pk)}$	200	Amps
Gate Emitter Voltage	$V_{GE}$	$\pm 20$	Volts
Operating and Storage Temperature	$T_J, T_{STG}$	-65 to +200	$^\circ C$
Total Device Dissipation @ $T_C = 25^\circ C$	$P_D$	350	W
Thermal Resistance, Junction to Case N, P S2	$R_{\theta JC}$	0.5 0.4	$^\circ C/W$



**NOTE:** All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

**DATA SHEET #:** TG0004A

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ELECTRICAL CHARACTERISTICS <sup>5/</sup>		SYMBOL	MIN	TYP	MAX	UNITS
<b>Collector - Emitter Breakdown Voltage</b> (V <sub>GE</sub> = 0V, I <sub>C</sub> = 250uA)		V <sub>(BR)CES</sub>	600	-	-	V
<b>Collector - Emitter Saturation Voltage</b> (V <sub>GE</sub> = 15V, I <sub>C</sub> = 60A)		V <sub>CE (SAT)</sub>	-	1.67	2.0	V
<b>Gate - Emitter Threshold Voltage</b> (V <sub>GE</sub> = V <sub>CE</sub> , I <sub>C</sub> = 250mA)		V <sub>GE (th)</sub>	3	-	6	V
<b>Zero Gate Voltage Collector Current</b> (V <sub>CE</sub> = 600V, V <sub>GE</sub> = 0V)		I <sub>CES</sub>	T <sub>J</sub> = 25°C -	-	500	μA
			T <sub>J</sub> = 150°C -	-	5.0	mA
<b>Gate - Emitter Leakage Current</b> (V <sub>GE</sub> = 30V, V <sub>CE</sub> = 0V)		I <sub>GES</sub>	-	-	120	nA
<b>Input Capacitance</b> (V <sub>CE</sub> = 25V, V <sub>GE</sub> = 0V, f = 1MHz)		C <sub>iss</sub>	-	7500	-	pF
<b>Output Capacitance</b> (V <sub>CE</sub> = 25V, V <sub>GE</sub> = 0V, f = 1MHz)		C <sub>oss</sub>	-	720	-	pF
<b>Reverse Transfer Capacitance</b> (V <sub>CE</sub> = 25V, V <sub>GE</sub> = 0V, f = 1MHz)		C <sub>rss</sub>	-	93	-	pF
<b>Turn-On Delay Time</b>	(V <sub>CC</sub> = 400V, I <sub>C</sub> = 50A <sub>DC</sub> , V <sub>GE</sub> = 15 / 0V, R <sub>G</sub> = --Ω, t <sub>p</sub> = 10μsec, Duty Cycle ≤ 1% T <sub>j</sub> = 150°C)	t <sub>d(on)</sub>	-	30	-	nsec
<b>Rise Time</b>		t <sub>r</sub>	-	49	-	nsec
<b>Turn-Off Delay Time</b>		t <sub>d(off)</sub>	-	130	-	nsec
<b>Fall Time</b>		t <sub>f</sub>	-	175	-	nsec

**NOTES:**

- \* Pulse Test: Pulse Width = 300us, Duty Cycle = 2%
- 1/ For Ordering Information, Price, and Availability Contact Factory.
- 2/ Screening per MIL-PRF-19500.
- 3/ For Package Outlines Contact Factory.
- 4/ Up and Down Bend Configurations Available for N and P (TO-258 and TO-259) Packages Only.
- 5/ All Electrical Characteristics @25°C, Unless Otherwise Specified.

**Available Part Numbers:**

SSG60N60N SSG60N60NDB SSG60N60NUB

**PIN ASSIGNMENT**

PACKAGE	Collector	Emitter	Gate
TO-258	Pin1	Pin 2	Pin 3
TO-259	Pin 1	Pin 2	Pin 3
SMD2	Pin 1	Pin 2	Pin 3