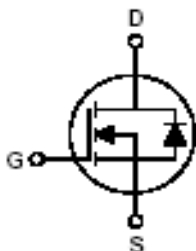
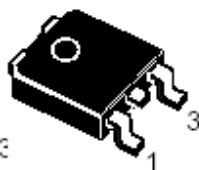
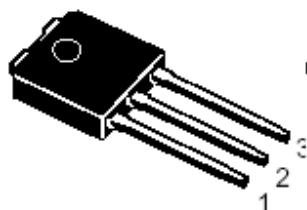


PIN CONFIGURATION

TO-251

TO-252



1.Gate 2.Drain 3.Source

FEATURE

- Robust High Voltage Temination.
- Avalanche Energy Specified
- Source-to Drain Diode Recovery Time Comparable to a Discrete Fast Recovery Diode
- Diode is Characterized for Use in Bridge Circurits
- I_{DSS} and $V_{DS(on)}$ Specified at Elevated Temperature

ABSOLUTE MAXIMUM RATINGS

RATING	SYMBOL	VALUE	UNIT
Drain to Current - Continuous	I_D	2.0	A
- Pulsed	I_{DM}	9.0	
Gate-to-Source Voltage – Continue	V_{GS}	+/-20	V
- Non-repetitive	V_{GSM}	+/-40	V
Total Power Dissipation	P_D		W
TO-251/252		60	
TO-220		60	
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C
Single Pulse Drain-to-Source Avalanche Energy – $T_J = 25^{\circ}\text{C}$ ($V_{DD} = 100\text{V}$, $V_{GS} = 10\text{V}$, $I_{AS} = 2\text{A}$, $L = 10\text{mH}$, $R_G = 25\Omega$)	E_{AS}	20	mJ
Thermal Resistance – Junction to Case	θ_{JC}	1.0	°C/W
- Junction to Ambient	θ_{JA}	62.5	
Maximum Lead Temperature for Soldering Purposes, 1/8" form 10 seconds	T_L	260	°C

**STANSON TECHNOLOGY**

120 Bentley Square, Mountain View, Ca 94040 USA

TEL: (650) 9389294 FAX: (650) 9389295

N Channel MOSFET**M02N60****2.0A****MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (Ta=25°C)**

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	CONDITION
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	600			Vdc	$V_{GS}=0, I_D=250\mu A$
Drain-Source Leakage Current	I_{DSS}			0.1 1.0	mA mA	$V_{DS}=600V, V_{GS}=0$ $V_{DS}=480V, V_{GS}=0, T_J=125^\circ C$
Gate-Source Leakage Current-Forward	I_{GSSF}			100	nA	$V_{GSF}=20V, V_{DS}=0$
Gate Threshold Voltage	$V_{GS(th)}$	2.0		4.0	V	$V_{DS}=V_{GS}, I_D=250\mu A$
Drain-Source On-Resistance	$R_{DS(on)}$			4.4	Ohm	$V_{GS}=10V, I_D=1.2A^*$
Input Capacitance	C_{iss}		435		pF	$V_{DS}=25V, V_{GS}=0, f=1\text{ MHz}$
Output Capacitance	C_{oss}		56		pF	
Reverse Transfer Capacitance	C_{rss}		9.2		pF	
Turn-On Delay Time	$t_{d(on)}$		12		nS	$V_{DD}=300V, I_D=2.0A,$ $V_{GS}=10V, R_G=18\Omega$
Turn-Off Delay Time	$T_{d(off)}$		30		nS	
Rise Time	t_r		21		nS	
Fall Time	t_f		24		nS	
Total Gate Charge	Q_g		13	22	nC	$V_{DS}=400V, I_D=2.0A$ $V_{GS}=10V^*$
Gate-Drain Charge	Q_{gd}		6.0		nC	
Gate-Drain Charge	Q_{gs}		2.0		nC	
Internal Drain Inductance	L_D		4.5		nH	Measured from the drain lead 0.25'' From package to center of die
Internal Drain Inductance	L_s		7.5		nH	Measured from the source lead 0.25'' from package to source bond pad
SOURCE-DRAIN DIODE CHARACTERISTICS						
Forward On-Voltage(1)	V_{DS}			1.5	V	$I_S=2.0A, V_{GS}=0V$ $dI_S/dt = 100A/\mu S$
Forward Turn Time	t_{on}		**		nS	
Reverse Recovery Time	t_{rr}		340		nS	

*Pulse Test: Pulse Width $\leq 300\mu S$, Duty Cycle $\leq 2\%$

**Negligible, Dominated by circuit inductance

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N Channel MOSFET

M02N60

2.0A

Typical Characteristics

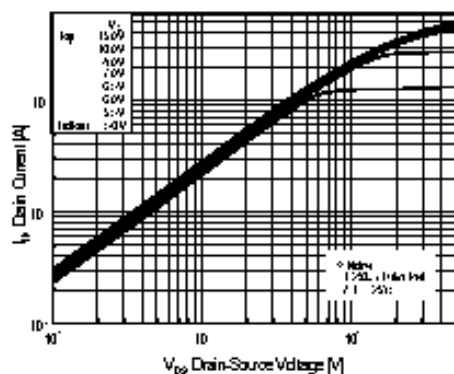


Figure 1. On-Region Characteristics

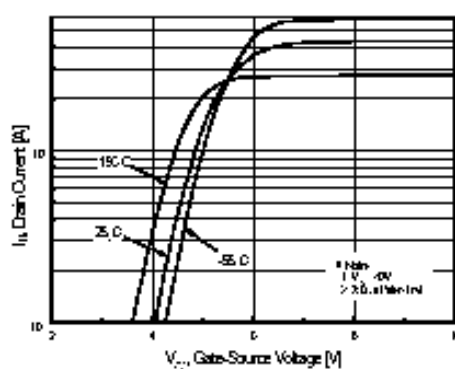


Figure 2. Transfer Characteristics

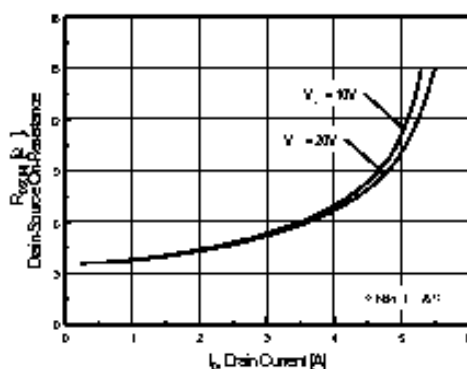


Figure 3. On-Resistance Variation vs Drain Current and Gate Voltage

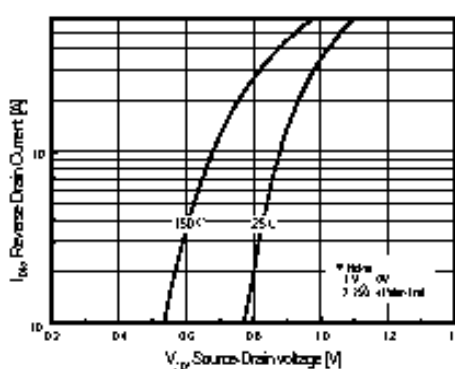


Figure 4. Body Diode Forward Voltage Variation with Source Current and Temperature

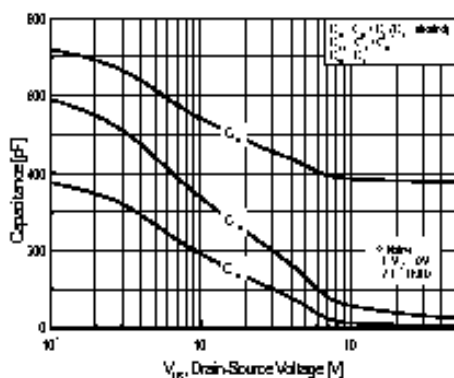


Figure 5. Capacitance Characteristics

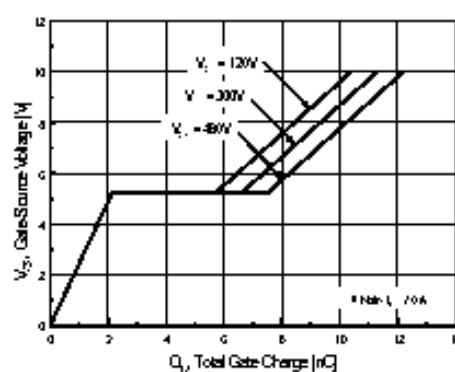


Figure 6. Gate Charge Characteristics

N Channel MOSFET

M02N60

2.0A

Typical Characteristics (Continued)

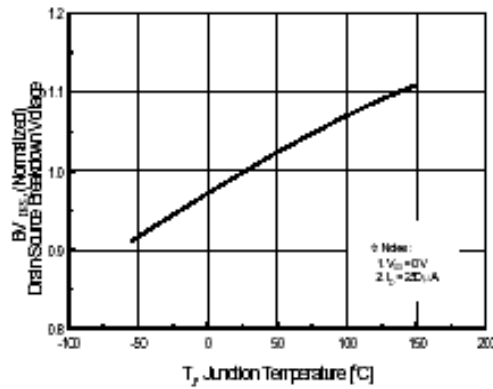


Figure 7. Breakdown Voltage Variation vs Temperature

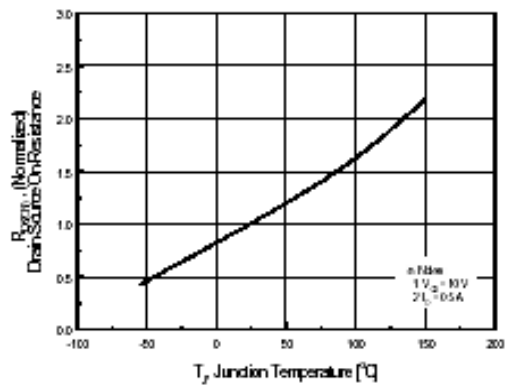


Figure 8. On-Resistance Variation vs Temperature

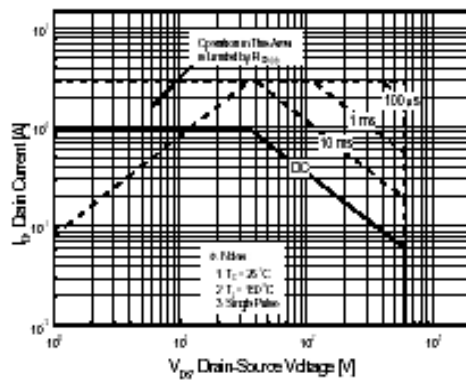


Figure 9-1. Maximum Safe Operating Area for SSP1N60B

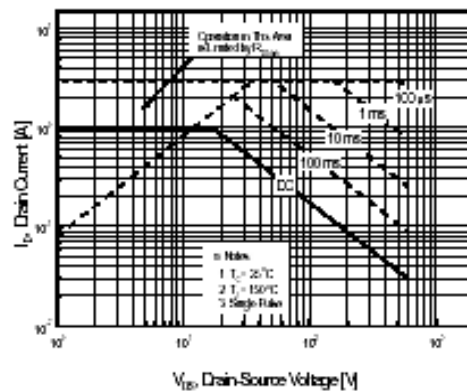


Figure 9-2. Maximum Safe Operating Area for SSS1N60B

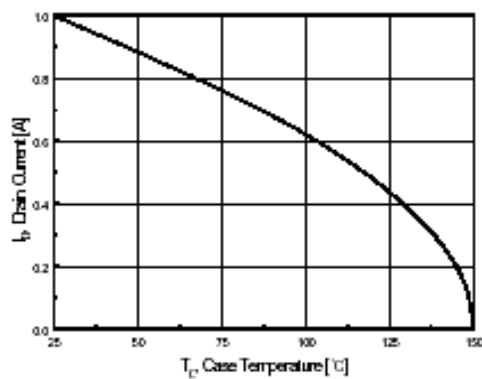


Figure 10. Maximum Drain Current vs Case Temperature