

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

SCP60N03S-C uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications.

FEATURES

- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation
- Special processing technology for high ESD capability

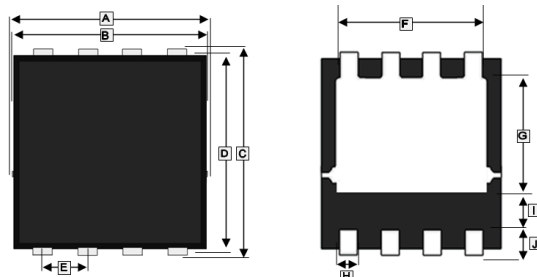
APPLICATIONS

- Hard Switched and High Frequency Circuits
- SMPS and general purpose applications

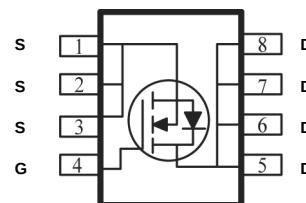
MARKING



DFN3x3-8J



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	3.2	3.4	G	1.78	1.98
B	3	3.2	H	0.25	0.35
C	3.25	3.45	I	0.35TYP.	
D	3	3.2	J	0.6TYP.	
E	0.65BSC.		K	0.1	0.25
F	2.39	2.59	L	0.7	0.8



PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN3x3-8J	5K	13 inch

ORDER INFORMATION

Part Number	Type
SCP60N03S-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ¹	$T_C=25^{\circ}\text{C}$	I_D	60	A
Pulsed Drain Current		I_{DM}	240	A
Single Pulse Avalanche Energy ²		E_{AS}	420	mJ
Power Dissipation	$T_A=25^{\circ}\text{C}$	P_D	3	W
	$T_C=25^{\circ}\text{C}$		34.7	
Thermal Resistance from Junction to Ambient ¹		$R_{\theta JA}$	41.67	$^{\circ}\text{C/W}$
Thermal Resistance from Junction to Case ¹		$R_{\theta JC}$	3.6	
Lead Temperature for Soldering Purposes @1/8" from case for 10s		T_L	260	$^{\circ}\text{C}$
Junction and Storage Temperature Range		T_J, T_{STG}	150, -55~150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

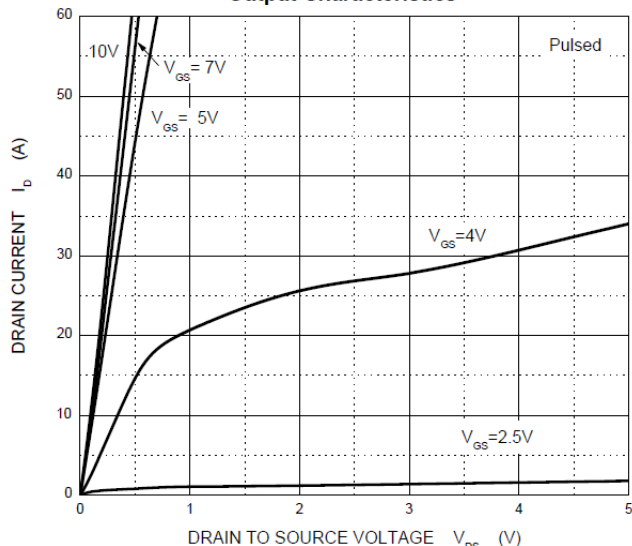
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	30	-	-	V	$V_{GS}=0$, $I_D=250\mu A$
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	$V_{DS}=24V$, $V_{GS}=0$
Gate-Body Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{DS}=0V$, $V_{GS}=\pm 20V$
Gate-Threshold Voltage	$V_{GS(th)}$	1	1.4	2.5	V	$V_{DS}=V_{GS}$, $I_D=250\mu A$
Static Drain-Source On-Resistance ³	$R_{DS(ON)}$	-	3.1	4.2	m Ω	$V_{GS}=10V$, $I_D=20A$
		-	4.5	7.3		$V_{GS}=4.5V$, $I_D=20A$
Forward Transconductance	g_{fs}	-	24	-	S	$V_{DS}=10V$, $I_D=20A$
Total Gate Charge	Q_g	-	54	-	nC	$V_{DS}=25V$ $V_{GS}=10V$ $I_D=14A$
Gate-Source Charge	Q_{gs}	-	4.1	-		
Gate-Drain Charge	Q_{gd}	-	19	-		
Turn-on Delay Time	$T_{d(on)}$	-	19	-	nS	$V_{DD}=15V$ $V_{GS}=10V$ $R_G=3\Omega$ $R_L=0.75\Omega$
Rise Time	T_r	-	44	-		
Turn-off Delay Time	$T_{d(off)}$	-	58	-		
Fall Time	T_f	-	16.7	-		
Input Capacitance	C_{iss}	-	2412	-	pF	$V_{DS}=15V$ $V_{GS}=0$ $f=1MHz$
Output Capacitance	C_{oss}	-	420	-		
Reverse Transfer Capacitance	C_{rss}	-	396	-		
Drain-Source Diode						
Diode Forward Voltage ³	V_{SD}	-	-	1.2	V	$V_{GS}=0$, $I_S=12A$
Continuous Source Current ¹	I_S	-	-	60	A	
Pulsed Source Current	I_{SM}	-	-	240	A	

Notes:

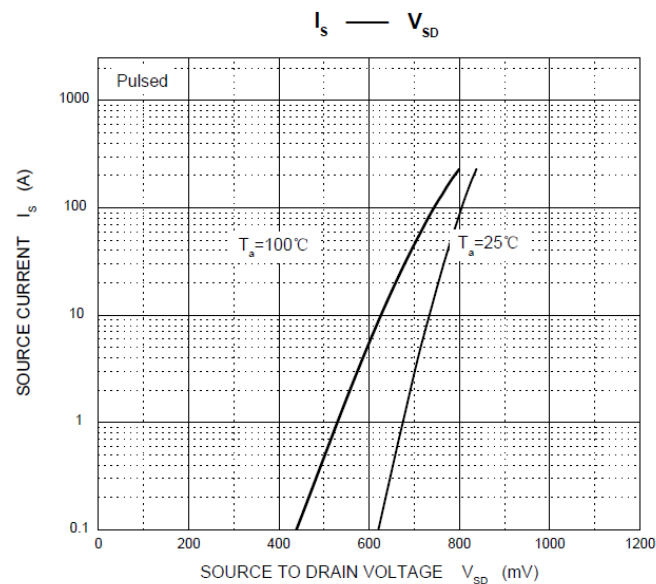
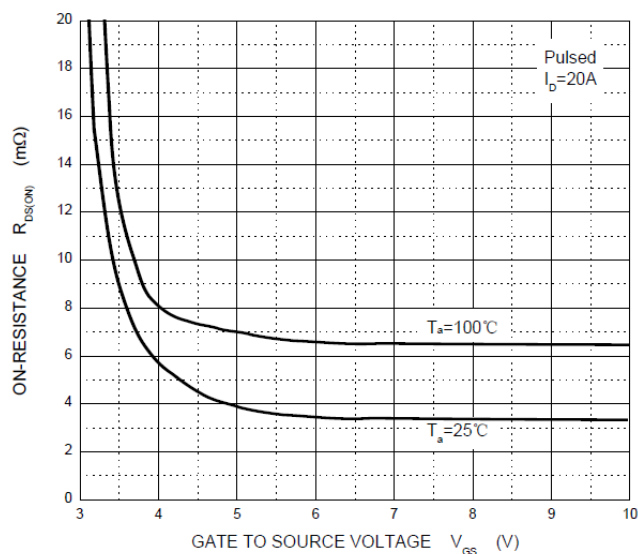
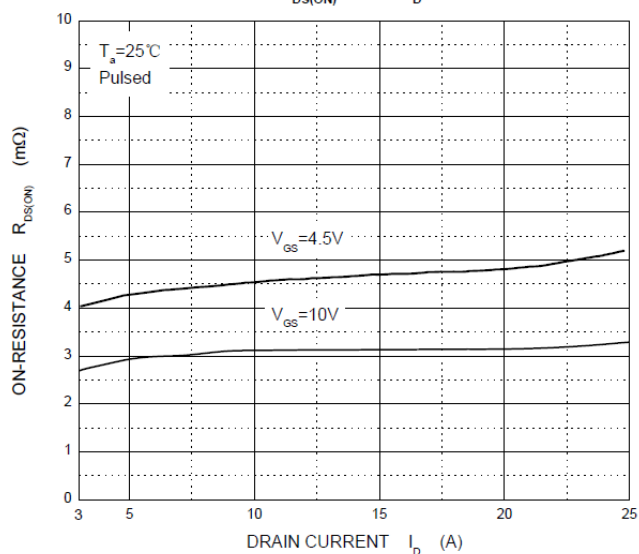
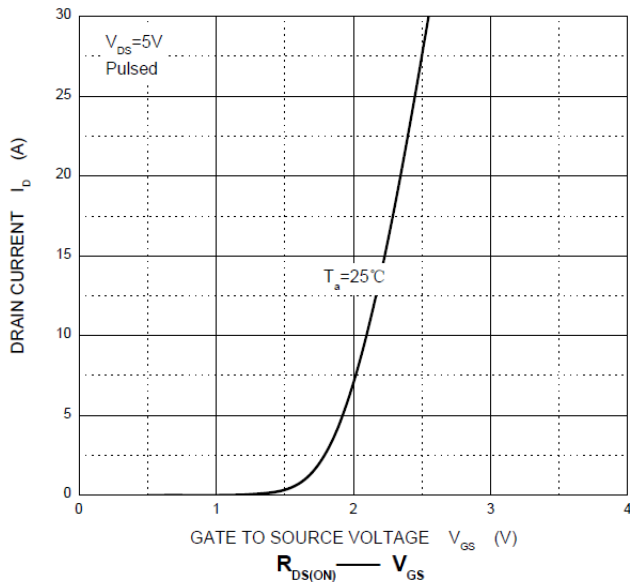
1. Mounted on a 25.4mm × 25.4mm × 0.8mm glass epoxy board.
2. Test condition: $V_{DD}=15\text{V}$, $L=0.1\text{mH}$, $R_G=25\Omega$, Starting $T_J=25^\circ\text{C}$.
3. Pulse Test: Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

CHARACTERISTICS CURVE

Output Characteristics



Transfer Characteristics



Threshold Voltage

