

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	24mΩ@4.5V	7.6A
	32mΩ@2.5V	

Feature

- Fast Switching
- Low Gate Charge and Rds on

Application

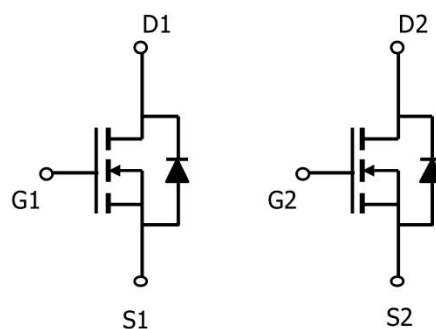
- Power Switching Application
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

Package

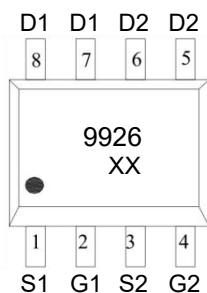


SOP-8

Circuit diagram



Marking



Absolute maximum ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	7.6	A
Pulsed Drain Current	I_{DM}	30.4	A
Power Dissipation	P_D	2	W
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}\text{C/W}$
Operating Junction Temperature	T_J	$-55 \sim +150$	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	$-55 \sim +150$	$^{\circ}\text{C}$

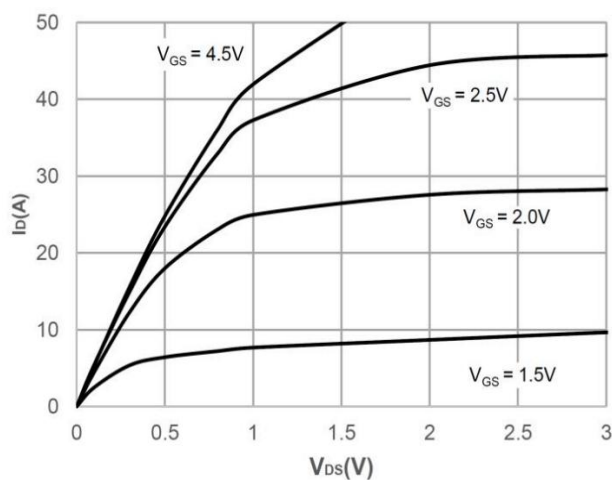
Electrical characteristics ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=16V, V_{GS}=0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$			± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.45	0.7	1.2	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=6A$		17	24	m Ω
		$V_{GS}=2.5V, I_D=5A$		24	32	
Dynamic characteristics ¹⁾						
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		800		pF
Output Capacitance	C_{oss}			155		
Reverse Transfer Capacitance	C_{rss}			125		
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V, I_D=3A$		11		nC
Gate-Source Charge	Q_{gs}			2.3		
Gate-Drain Charge	Q_{gd}			2.5		
Turn-on delay time	$t_{d(on)}$	$V_{DS}=10V, V_{GS}=4.5V, I_D=3A$ $R_G=3\Omega$		5		nS
Turn-on rise time	t_r			18		
Turn-off delay time	$t_{d(off)}$			24		
Turn-off fall time	t_f			8		
Source-Drain Diode characteristics						
Diode Forward Current	I_S				7.6	A
Diode Forward voltage	V_{SD}	$V_{GS}=0V, I_S=1A$			1.2	V
Reverse Recovery Time	T_{rr}	$I_S=3A, di/dt=-100A/\mu s$ $T_J=25^{\circ}C$		7		nS
Reverse Recovery Charge	Q_{rr}			2		nC

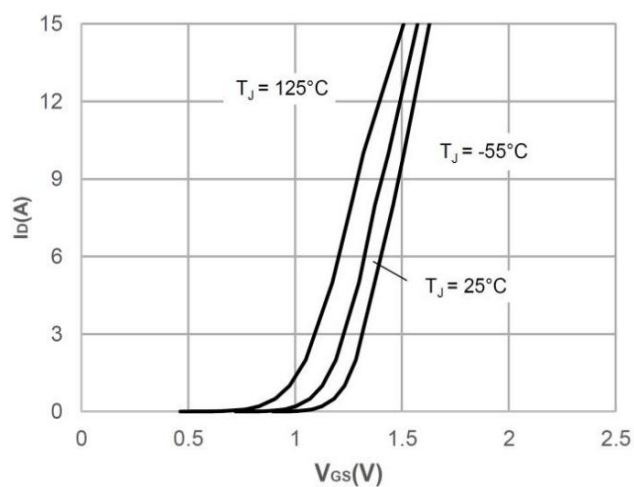
Notes:

1) Guaranteed by design, not subject to production testing.

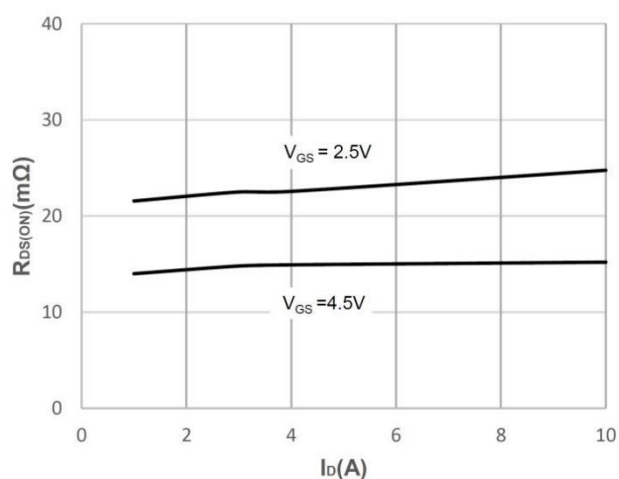
Typical Characteristics



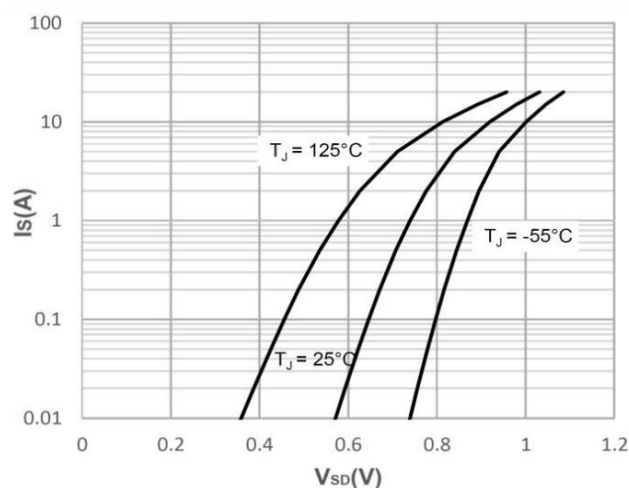
Output Characteristics



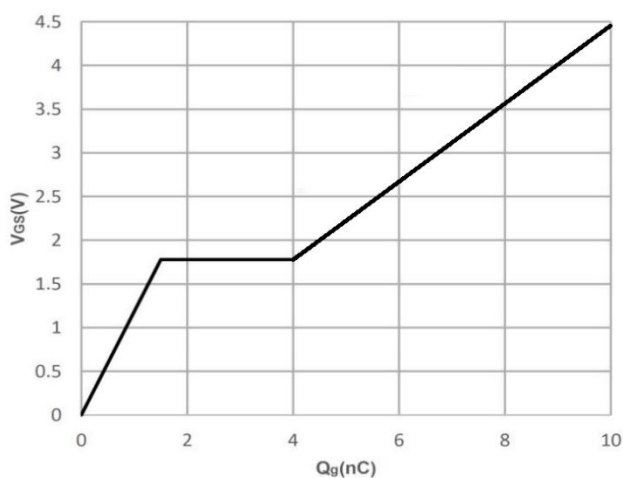
Typical Transfer Characteristics



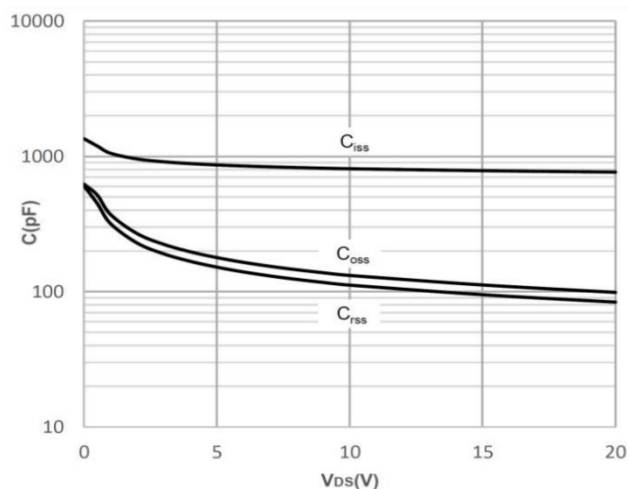
On-resistance vs. Drain Current



Body Diode Characteristics

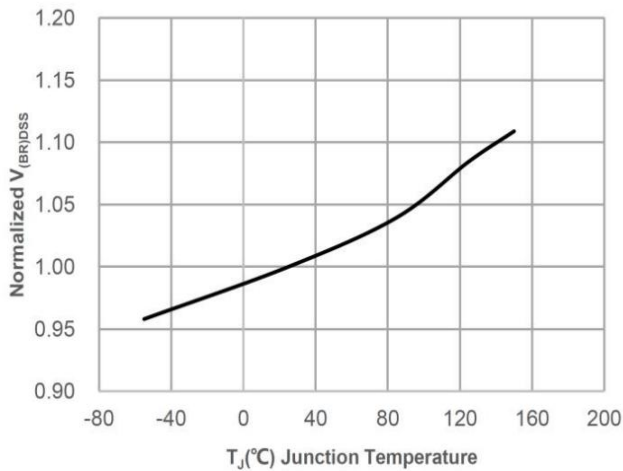


Gate Charge Characteristics

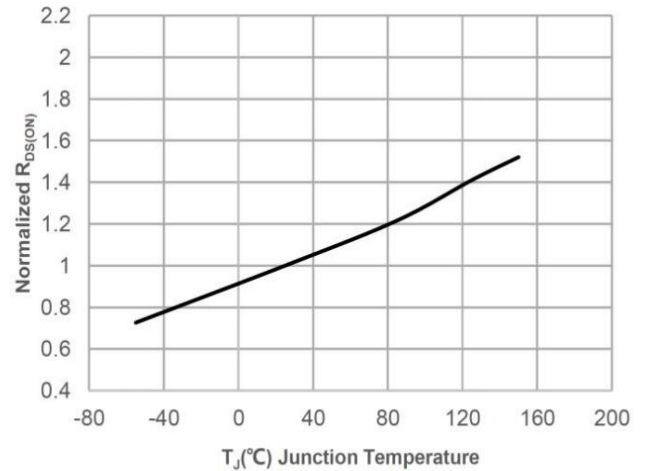


Capacitance Characteristics

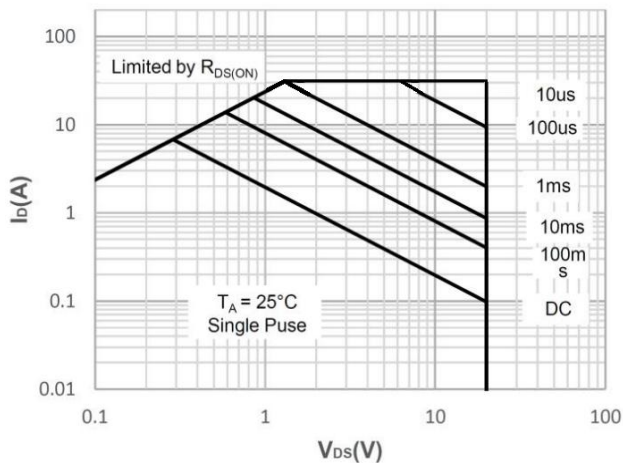
Typical Characteristics



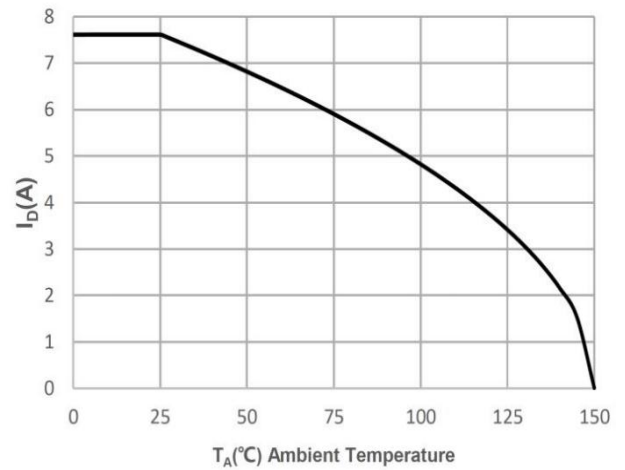
Normalized Breakdown voltage vs. Junction



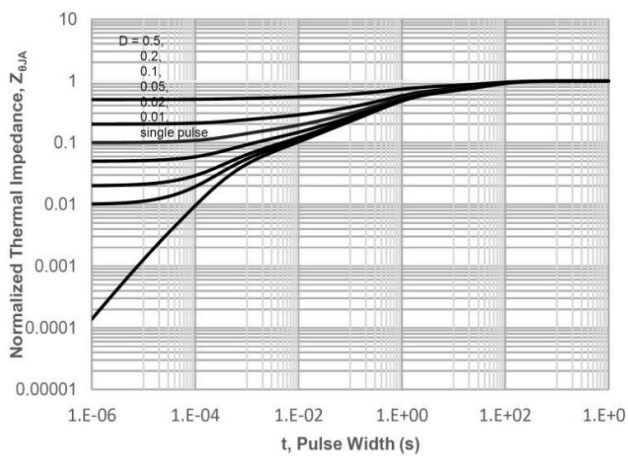
Normalized on Resistance vs.



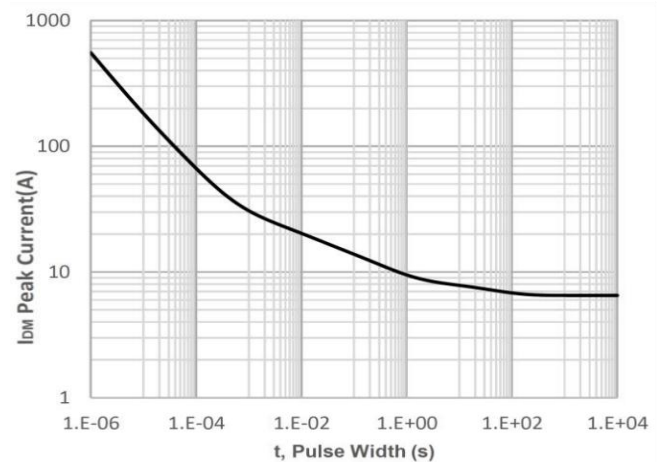
Maximum Safe Operating Area



Maximum Continuous Drain Current vs. Ambient Temperature

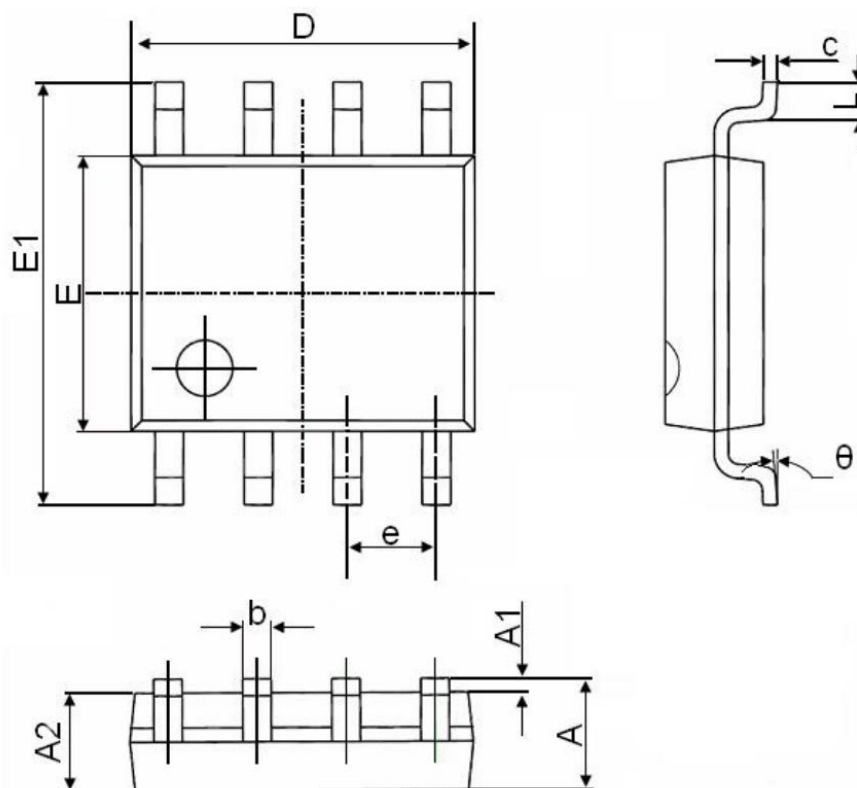


Normalized Maximum Transient Thermal Impedance



Peak Current Capacity

SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.201
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 BSC.		0.050 BSC.	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°