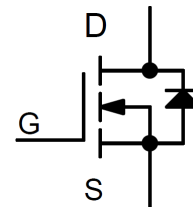
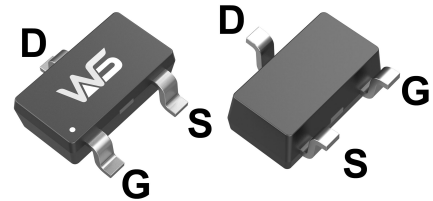


Features

- 200V/1.2A,
 $R_{DS(ON)} = 680m\Omega(\text{max.}) @ V_{GS}=10V$
- ESD Protection
- 100% UIS + R_g Tested
- Reliable and Rugged
- Lead Free and Green Devices Available
 (RoHS Compliant)

Pin Configuration



SOT-23-3

Applications

- DC-DC converter for Networking.
- Load switch.

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

Symbol	Parameter	Rating	Unit
Common Ratings			
V_{DSS}	Drain-Source Voltage	200	V
V_{GSS}	Gate-Source Voltage	± 25	
T_J	Maximum Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	
I_S	Diode Continuous Forward Current	$T_A=25^\circ\text{C}$ 1.2	A
I_D	Continuous Drain Current	$T_A=25^\circ\text{C}$ 1.2	A
		$T_A=70^\circ\text{C}$ 0.96	
I_{DM}^a	Pulsed Drain Current	$T_A=25^\circ\text{C}$ 4.8	A
P_D	Maximum Power Dissipation	$T_A=25^\circ\text{C}$ 2.5	W
		$T_A=70^\circ\text{C}$ 1.6	
$R_{\theta JA}^c$	Thermal Resistance-Junction to Ambient	$t \leq 10s$ 50	$^\circ\text{C/W}$
		Steady State 90	$^\circ\text{C/W}$
I_{AS}^b	Avalanche Current, Single pulse	$L=0.5mH$ 1	A
E_{AS}^b	Avalanche Energy, Single pulse	$L=0.5mH$ 0.25	mJ

Note a : Pulse width limited by max. junction temperature.

Note b : UIS tested and pulse width limited by maximum junction temperature 150°C (initial temperature $T_J=25^\circ\text{C}$).

Note c : Surface mounted on 1in^2 pad area.

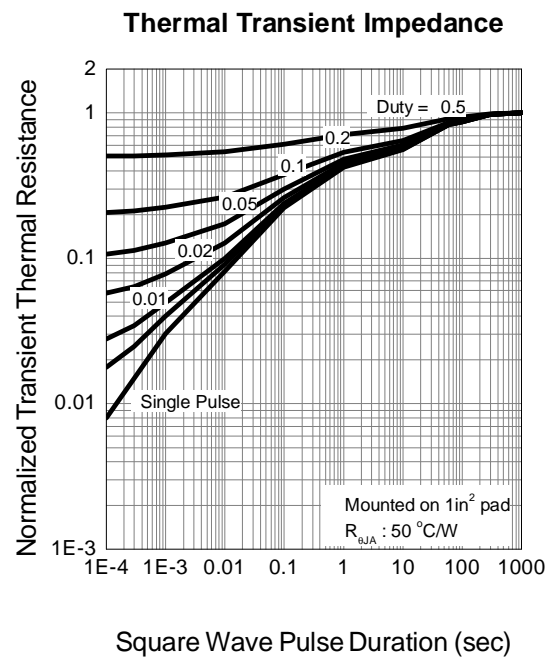
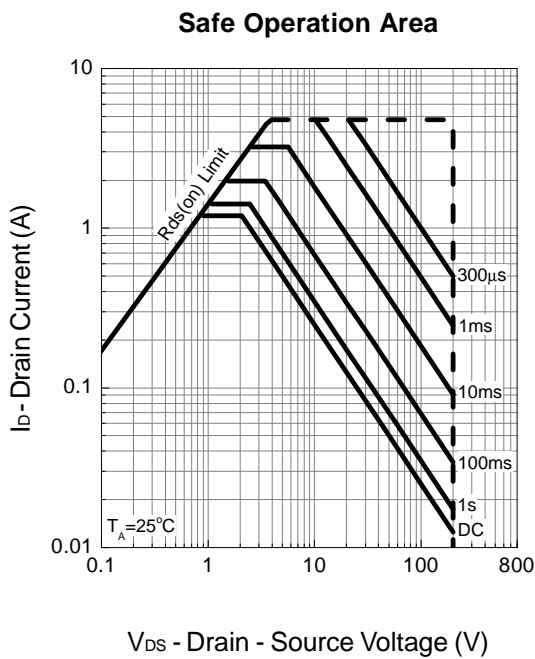
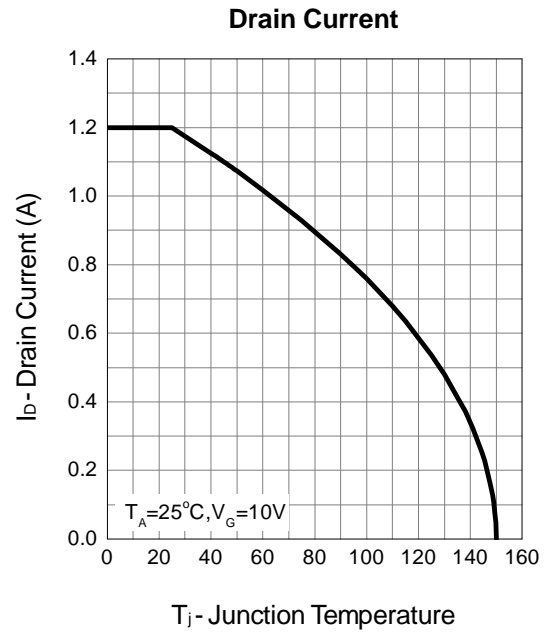
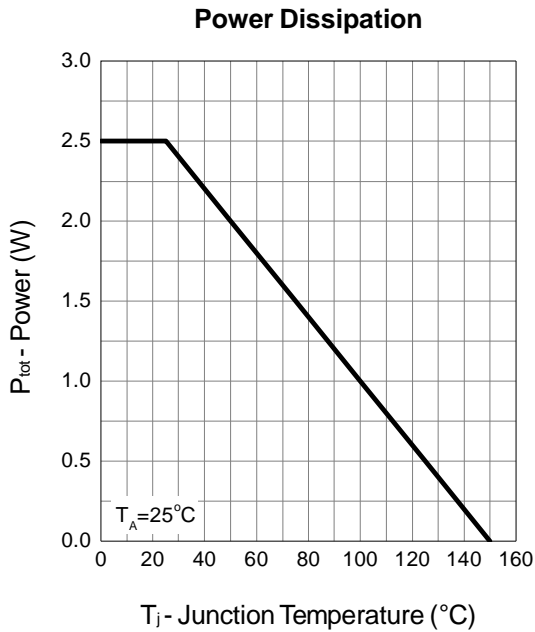
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_{DS}=250\mu A$	200	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=160V, V_{GS}=0V$ $T_J=85^\circ\text{C}$	-	-	1	μA
			-	-	30	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	3	4	5	V
I_{GSS}	Gate Leakage Current	$V_{GS}=\pm 25V, V_{DS}=0V$	-	-	± 10	μA
$R_{DS(ON)}^d$	Drain-Source On-state Resistance	$V_{GS}=10V, I_{DS}=1A$	-	570	680	m Ω
Diode Characteristics						
V_{SD}^d	Diode Forward Voltage	$I_{SD}=1A, V_{GS}=0V$	-	0.8	1.3	V
t_{rr}	Reverse Recovery Time	$I_{SD}=1A, di_{SD}/dt=100A/\mu s$	-	48	-	ns
Q_{rr}	Reverse Recovery Charge		-	70	-	nC
Dynamic Characteristics^e						
R_G	Gate Resistance	$V_{GS}=0V, V_{DS}=0V, f=1\text{MHz}$	-	4	-	Ω
C_{iss}	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=30V,$ Frequency=1.0MHz	-	280	-	pF
C_{oss}	Output Capacitance		-	25	-	
C_{rss}	Reverse Transfer Capacitance		-	8.5	-	
$t_{d(ON)}$	Turn-on Delay Time	$V_{DD}=30V, R_L=30\Omega,$ $I_{DS}=1A, V_{GEN}=10V,$ $R_G=6\Omega$	-	10	18	ns
t_r	Turn-on Rise Time		-	8	15	
$t_{d(OFF)}$	Turn-off Delay Time		-	9	17	
t_f	Turn-off Fall Time		-	2	4	
Gate Charge Characteristics^e						
Q_g	Total Gate Charge	$V_{DS}=100V, V_{GS}=10V,$ $I_{DS}=1A$	-	6	9	nC
Q_{gs}	Gate-Source Charge		-	2	-	
Q_{gd}	Gate-Drain Charge		-	1.5	-	

Note d : Pulse test ; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

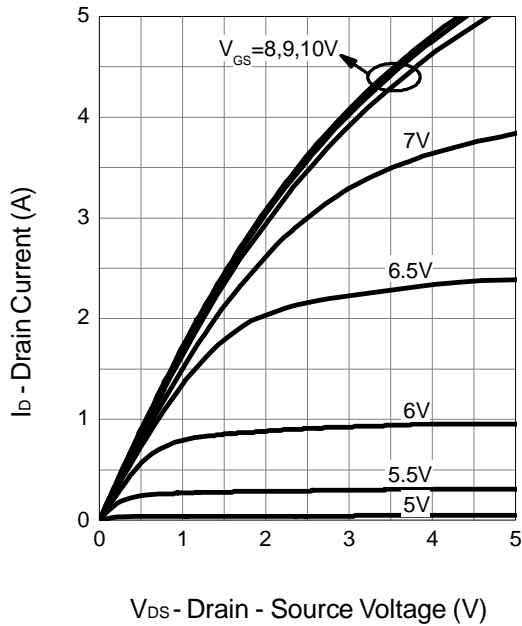
Note e : Guaranteed by design, not subject to production testing.

Typical Operating Characteristics

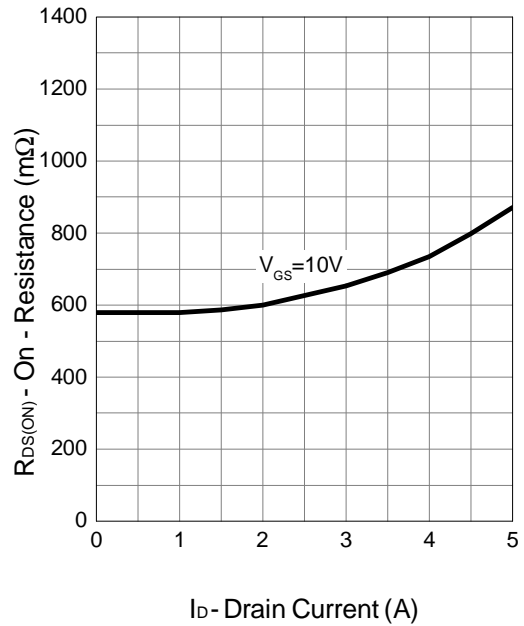


Typical Operating Characteristics (Cont.)

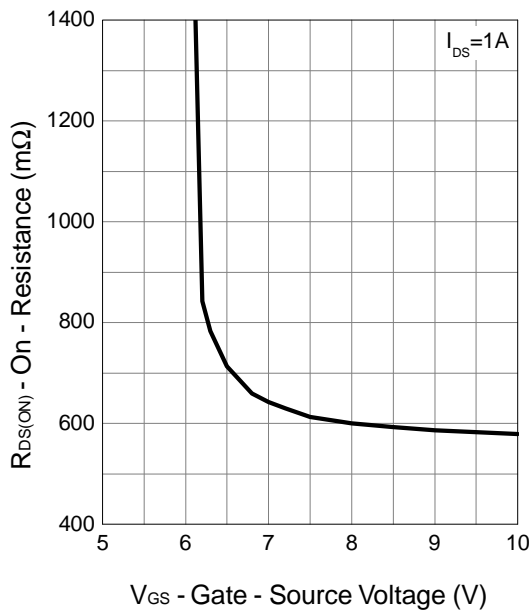
Output Characteristics



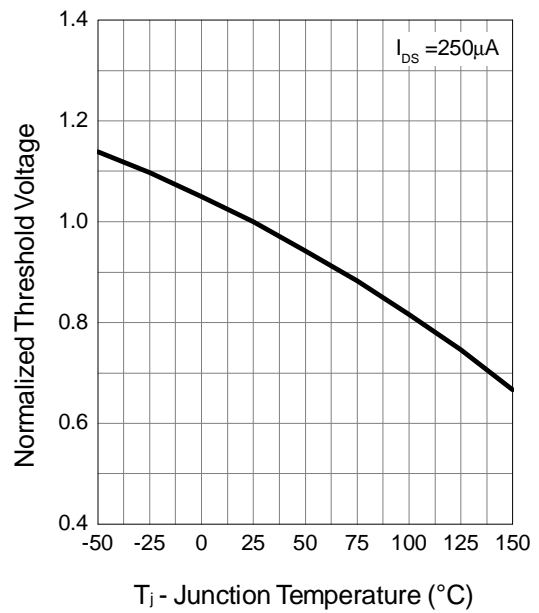
Drain-Source On Resistance



Gate-Source On Resistance

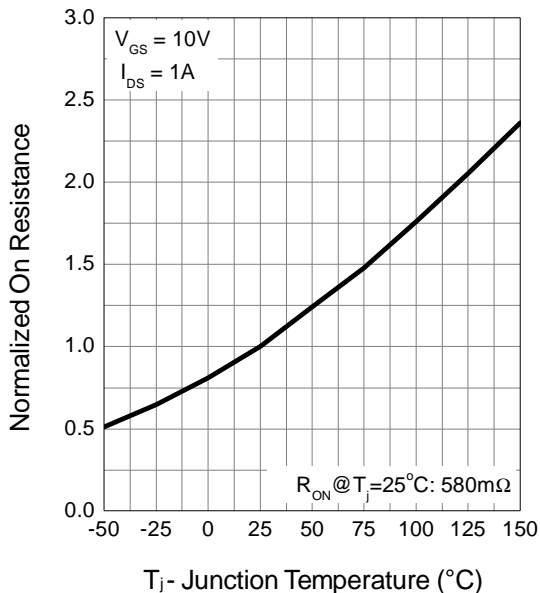


Gate Threshold Voltage

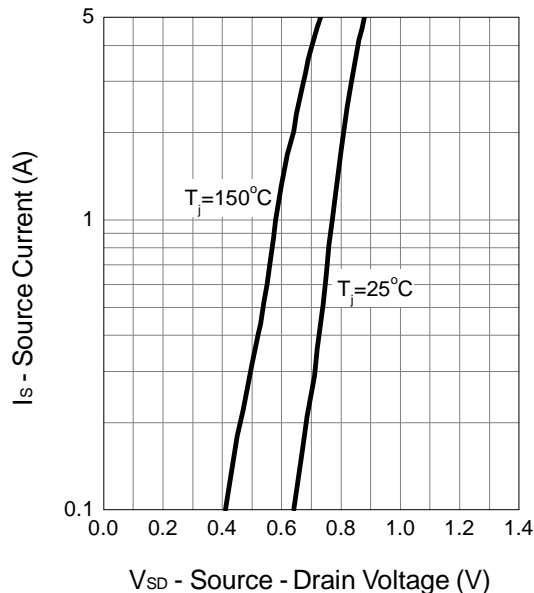


Typical Operating Characteristics (Cont.)

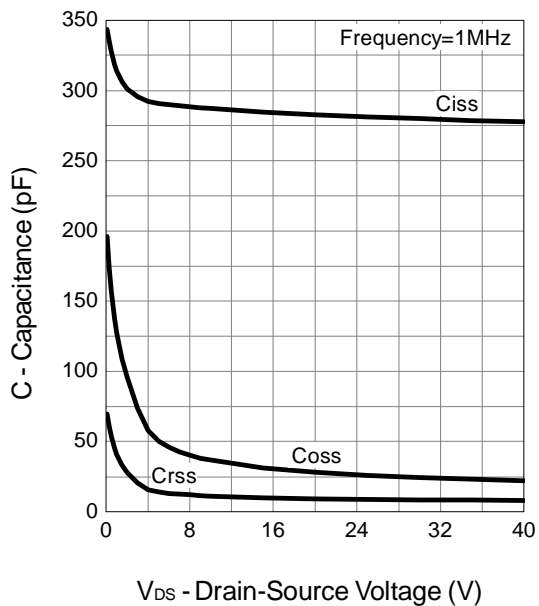
Drain-Source On Resistance



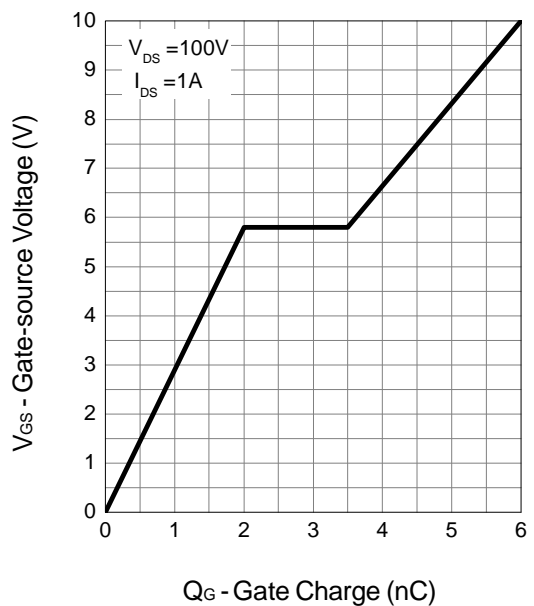
Source-Drain Diode Forward



Capacitance



Gate Charge





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