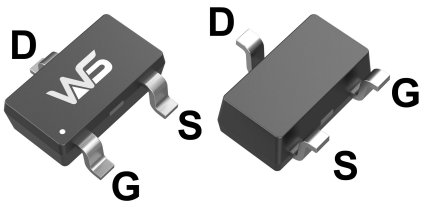
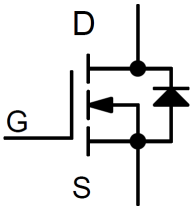
Features

- 200V/1.2A,
  $R_{DS(ON)}$= 680mΩ(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°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	°C
T_{STG}	Storage Temperature Range		-55 to 150	
I_S	Diode Continuous Forward Current	T_A=25°C	1.2	A
I_D	Continuous Drain Current	T_A=25°C	1.2	A
		T_A=70°C	0.96	
I_{DM} [a]	Pulsed Drain Current	T_A=25°C	4.8	A
P_D	Maximum Power Dissipation	T_A=25°C	2.5	W
		T_A=70°C	1.6	
$R_{\theta JA}$ [c]	Thermal Resistance-Junction to Ambient	t ≤ 10s	50	°C/W
		Steady State	90	°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°C).
Note c：Surface mounted on 1in^2 pad area.

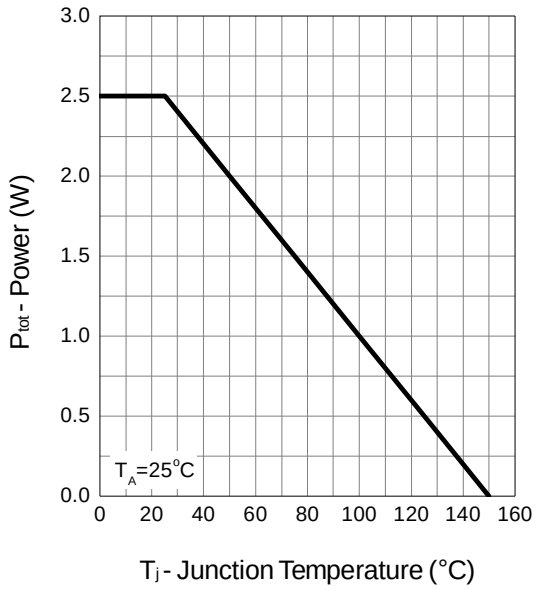
Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_{DS}=250μA	200	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=160V, V_{GS}=0V	-	-	1	μA
		T_J=85°C	-	-	30	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_{DS}=250μA	3	4	5	V
I_{GSS}	Gate Leakage Current	V_{GS}=±25V, V_{DS}=0V	-	-	±10	μA
$R_{DS(ON)}$ [d]	Drain-Source On-state Resistance	V_{GS}=10V, I_{DS}=1A	-	570	680	mΩ
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/μs	-	48	-	ns
Q_{rr}	Reverse Recovery Charge		-	70	-	nC
Dynamic Characteristics [e]						
R_G	Gate Resistance	V_{GS}=0V,V_{DS}=0V,f=1MHz	-	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=30Ω, I_{DS}=1A, V_{GEN}=10V, R_G=6Ω	-	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	-	

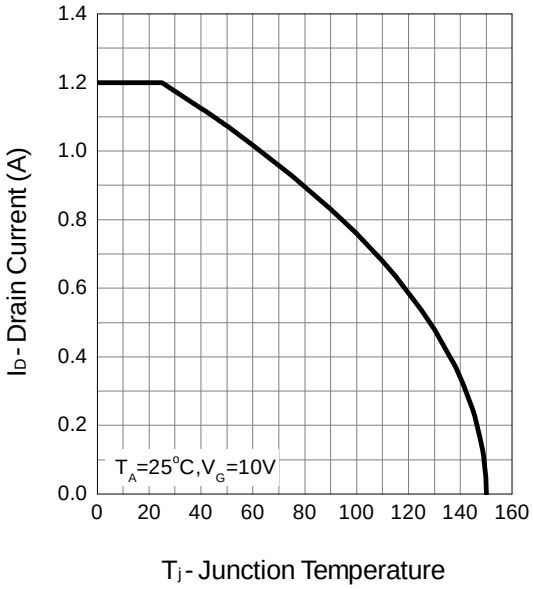
Note d：Pulse test ; pulse width≤300μs, duty cycle≤2%.
Note e：Guaranteed by design, not subject to production testing.

Typical Operating Characteristics

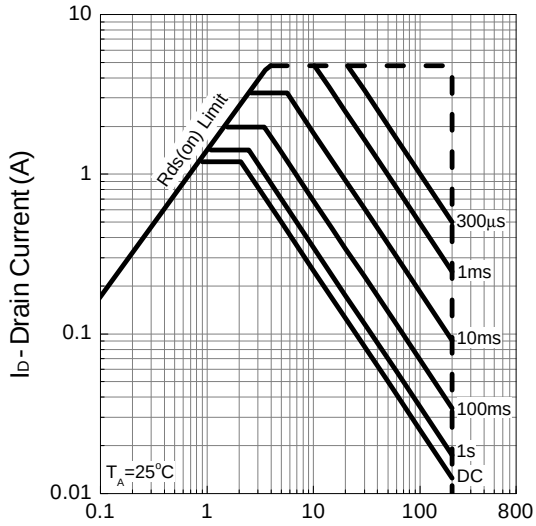
Power Dissipation



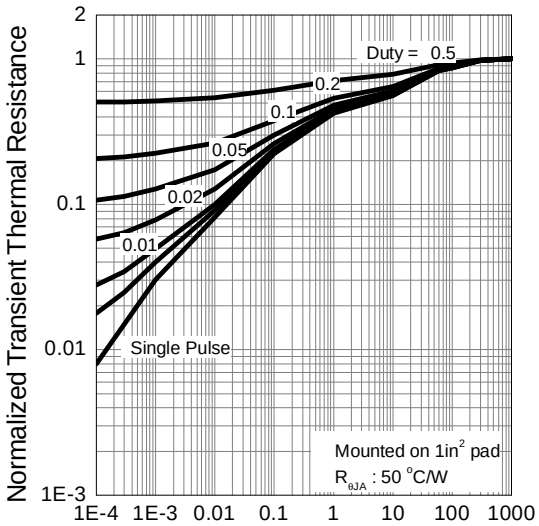
Drain Current



Safe Operation Area

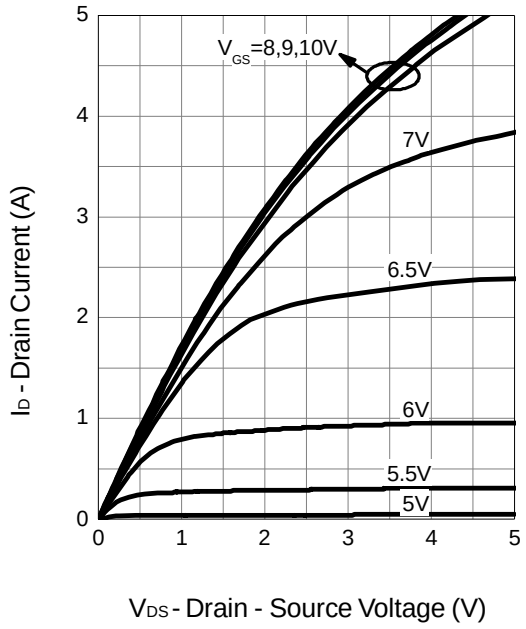


Thermal Transient Impedance

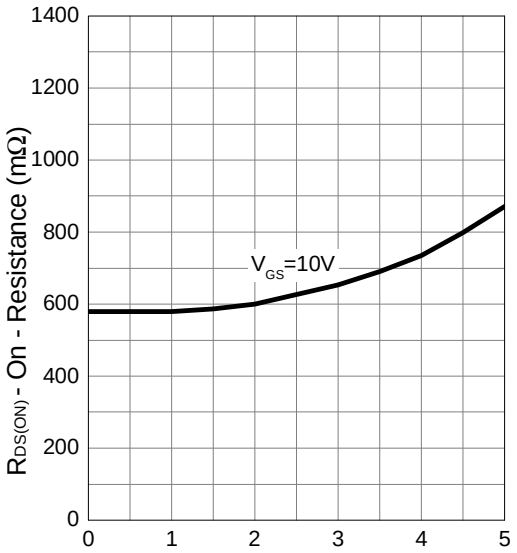


Typical Operating Characteristics (Cont.)

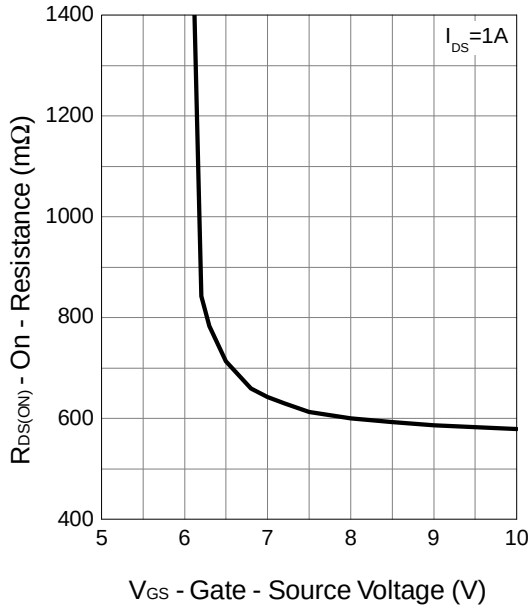
Output Characteristics



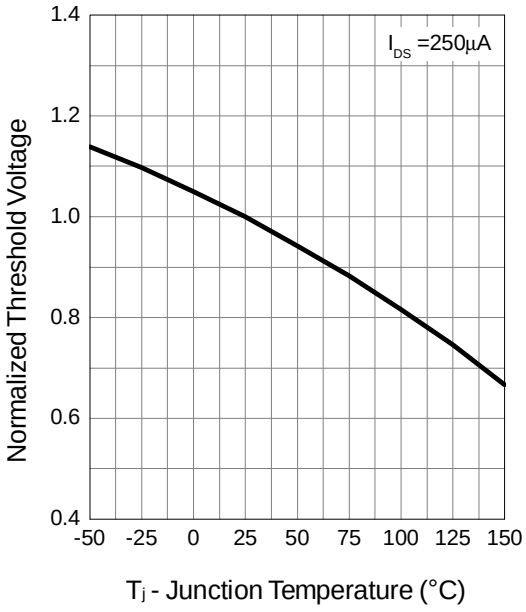
Drain-Source On Resistance



Gate-Source On Resistance

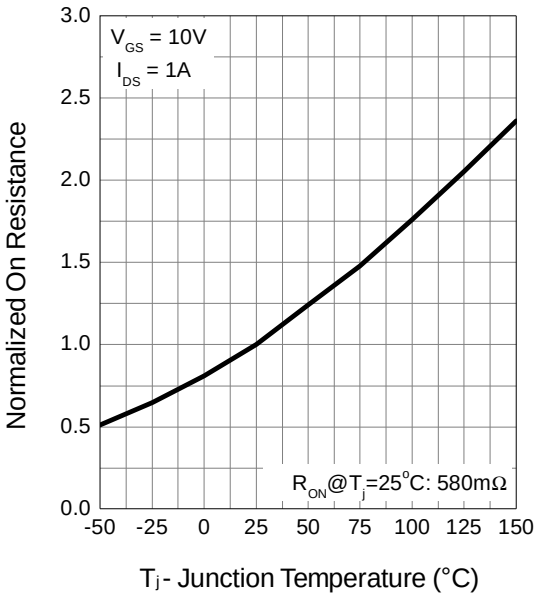


Gate Threshold Voltage

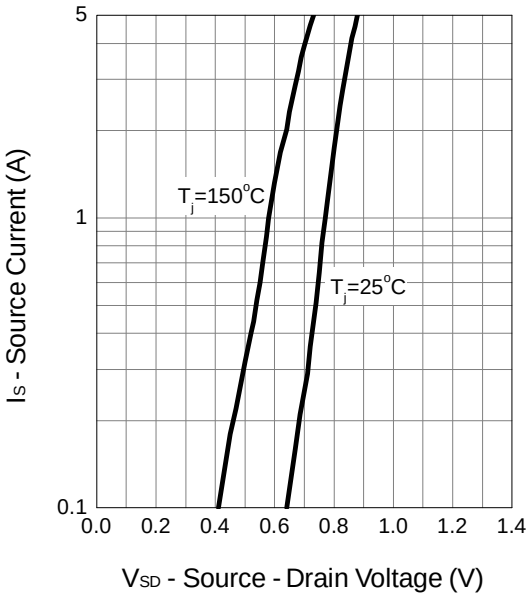


Typical Operating Characteristics (Cont.)

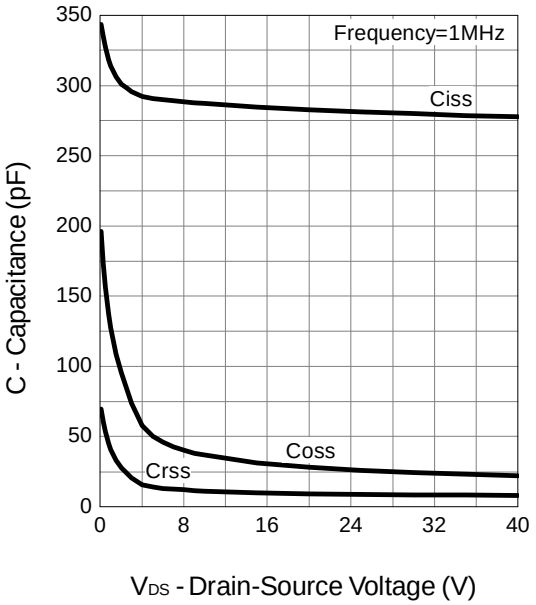
Drain-Source On Resistance



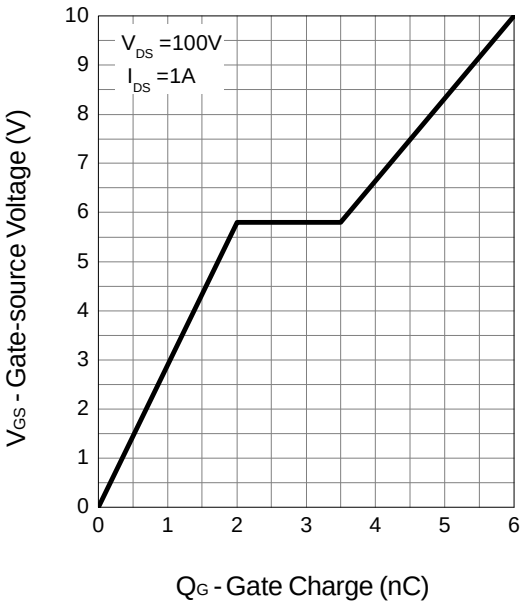
Source-Drain Diode Forward



Capacitance



Gate Charge



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