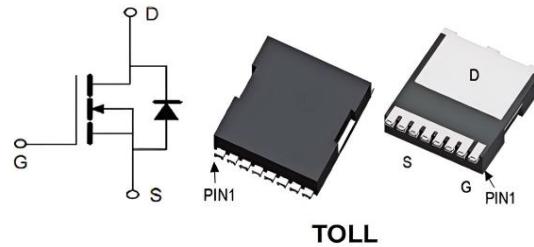


N-Channel Power MOSFET 100V/360A

Parameter	Value	Unit
VDS	100	V
RDS(on)	1.0	mΩ
ID	360	A


FEATURES

- Advanced SGT MOS technology
- Low Thermal Resistance
- Low Gate Charge

APPLICATIONS

- Load Switch
- PWM Application
- Power Management

MAXIMUM RATED VALUES

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	100	V
Gate-Source Voltage	VGS	±20	V
Continuous Drain Current	ID	360	A
		254.1	
Peak Drain Current, Pulsed 1)	IDM	1440	A
Single Pulse Avalanche Energy 2)	EAS	1806	mJ
Power Dissipation	PD	500	W
Operating Junction and Storage Temperature Range	TJ, Tstg	-55~150	°C

THERMAL CHARACTERISTICS

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Case 3)	R _θ JC	0.25	°C/W
Thermal Resistance from Junction to Ambient 3)	R _θ JA	62.5	°C/W

Note:

1)Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%, Repetitive rating, pulse width limited by junction temperature TJ(MAX) = 150°C.

2)Limited by TJ(MAX), starting TJ = 25 °C, L = 0.5 mH, R_g = 25 Ω, V_{DD} = 50V, V_{GS} = 10V.

3)Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.

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

Parameter	Symbol	Min.	Type.	Max.	Unit
STATIC PARAMETERS					
Drain-Source Breakdown Voltage at $ID=250\mu\text{A}$	BV_{DSS}	100			V
Drain-Source Leakage Current at $V_{\text{DS}}=100\text{V}$	ID_{SS}			1	μA
Gate Leakage Current at $V_{\text{GS}}=\pm 20\text{V}$	IG_{SS}			± 100	nA
Gate-Source Threshold Voltage at $V_{\text{DS}}=V_{\text{GS}}$, $ID=250\mu\text{A}$	$V_{\text{GS}}(\text{th})$	2		4	V
Drain-Source On-State Resistance at $V_{\text{GS}}=10\text{V}$, $ID=50\text{A}$	$\text{R}_{\text{DS(on)}}$		1.0	1.3	$\text{m}\Omega$
DYNAMIC PARAMETERS					
Input Capacitance at $V_{\text{GS}}=0\text{V}$, $V_{\text{DS}}=50\text{V}$, $f=1\text{MHz}$	C_{iss}		14200		pF
Output Capacitance at $V_{\text{GS}}=0\text{V}$, $V_{\text{DS}}=50\text{V}$, $f=1\text{MHz}$	C_{oss}		4000		pF
Reverse Transfer Capacitance at $V_{\text{GS}}=0\text{V}$, $V_{\text{DS}}=50\text{V}$, $f=1\text{MHz}$	C_{rss}		935		pF
Gate charge total at $V_{\text{DS}}=50\text{V}$, $ID=50\text{A}$, $V_{\text{GS}}=10\text{V}$	Q_g		240		nC
Gate to Source Charge at $V_{\text{DS}}=50\text{V}$, $ID=50\text{A}$, $V_{\text{GS}}=10\text{V}$	Q_{gs}		64		nC
Gate to Drain Charge at $V_{\text{DS}}=50\text{V}$, $ID=50\text{A}$, $V_{\text{GS}}=10\text{V}$	Q_{gd}		64		nC
Turn-On Delay Time at $V_{\text{GS}}=10\text{V}$, $V_{\text{DS}}=50\text{V}$, $ID=50\text{A}$	$t_{\text{d(on)}}$		45		nS
Turn-On Rise Time at $V_{\text{GS}}=10\text{V}$, $V_{\text{DS}}=50\text{V}$, $ID=50\text{A}$	t_{r}		51		nS
Turn-Off Delay Time at $V_{\text{GS}}=10\text{V}$, $V_{\text{DS}}=50\text{V}$, $ID=50\text{A}$	$t_{\text{d(off)}}$		123		nS
Turn-Off Fall Time at $V_{\text{GS}}=10\text{V}$, $V_{\text{DS}}=50\text{V}$, $ID=50\text{A}$	t_{f}		52		nS
Body-Diode PARAMETERS					
Drain-Source Diode Forward Voltage at $IS=1\text{A}$, $V_{\text{GS}}=0\text{V}$	V_{SD}			1.2	V

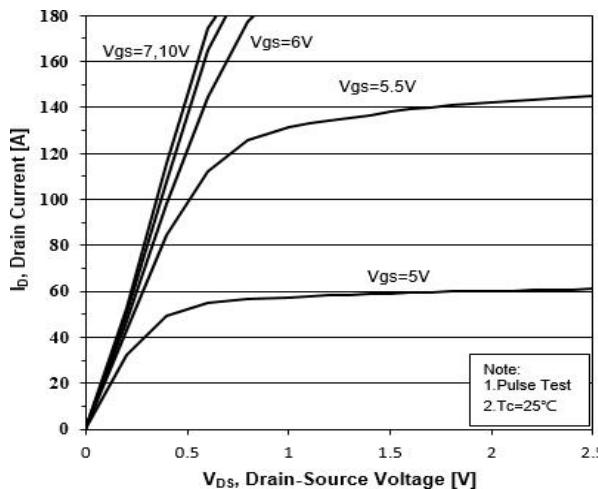
CHARACTERISTICS DIAGRAMS


Figure 1. Typical Output Characteristics

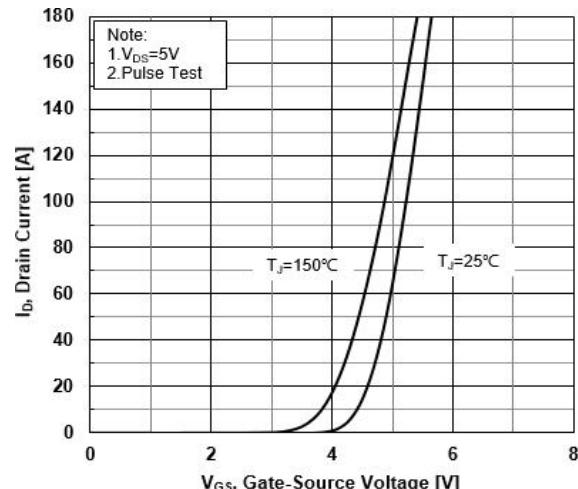


Figure 2. Typical Transfer Characteristics

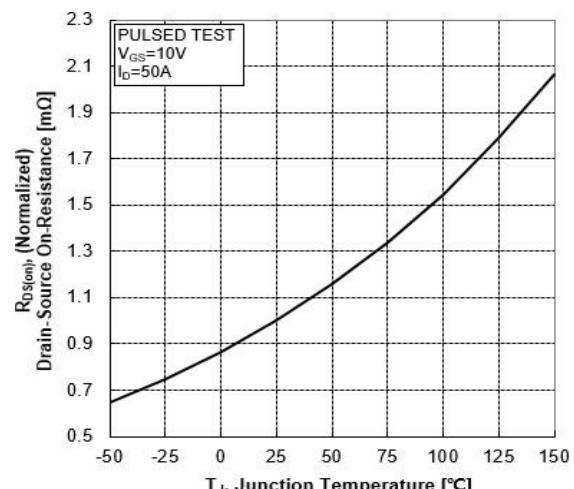
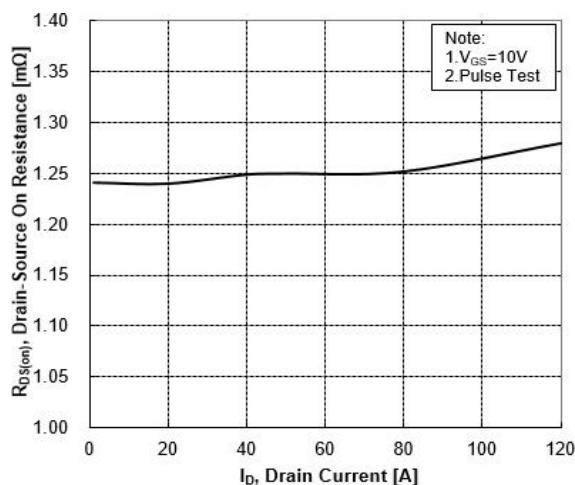


Figure 3. Drain-Source On-Resistance vs Drain Current

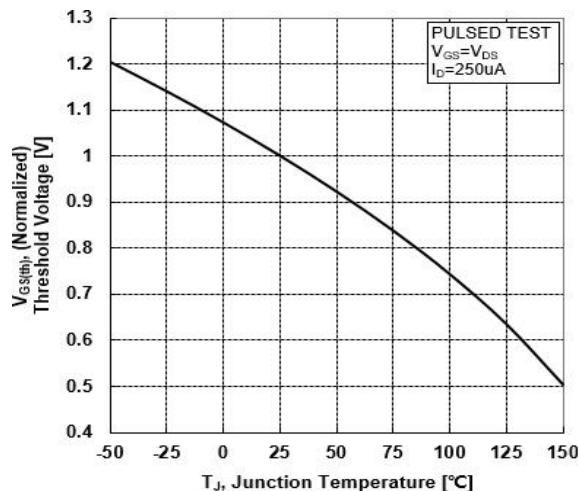


Figure 4. Normalized On-Resistance vs Junction Temperature

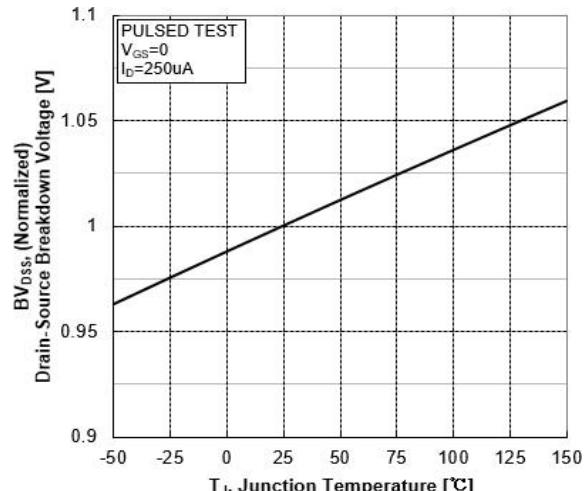


Figure 5. Normalized Threshold Voltage vs Junction Temperature

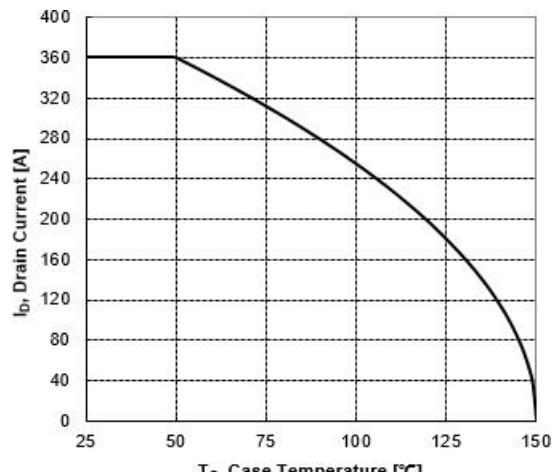
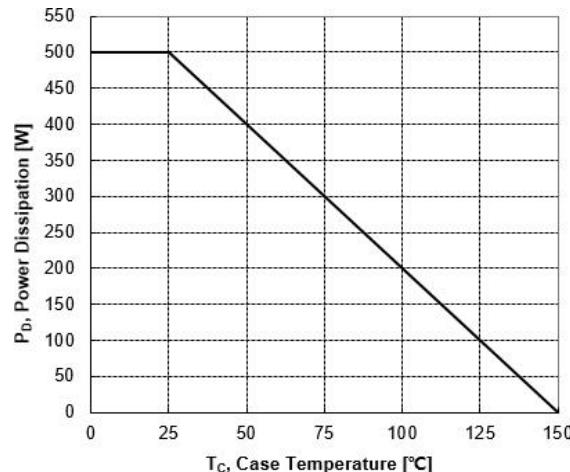


Figure 7. Maximum Power Dissipation vs Case Temperature

Figure 8. Maximum Continuous Drain Current vs Case Temperature

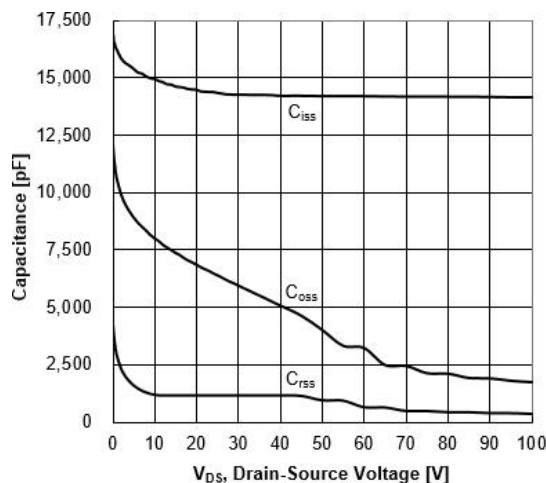


Figure 9. Capacitance Characteristics

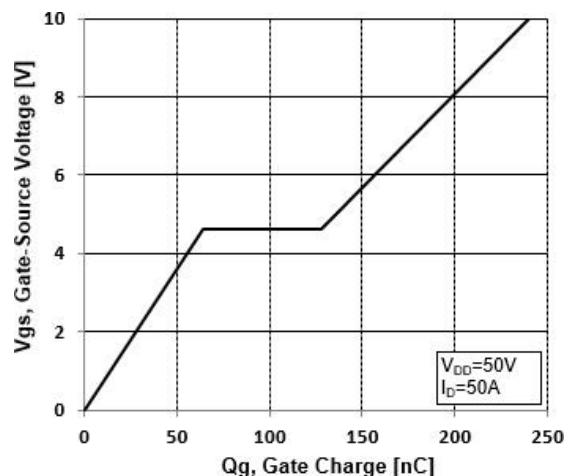


Figure 10. Typical Gate Charge vs Gate-Source

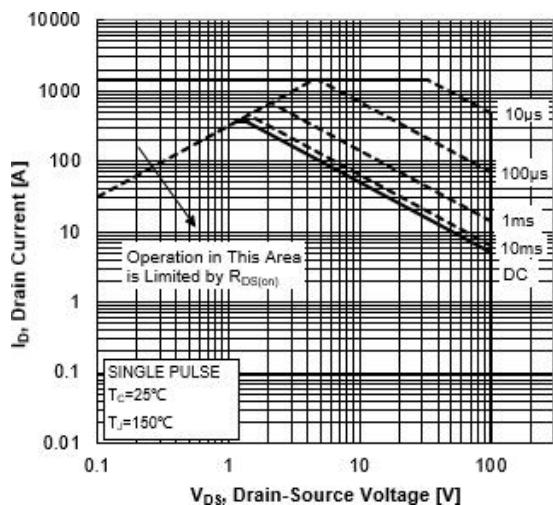


Figure 11. Safe Operating Area

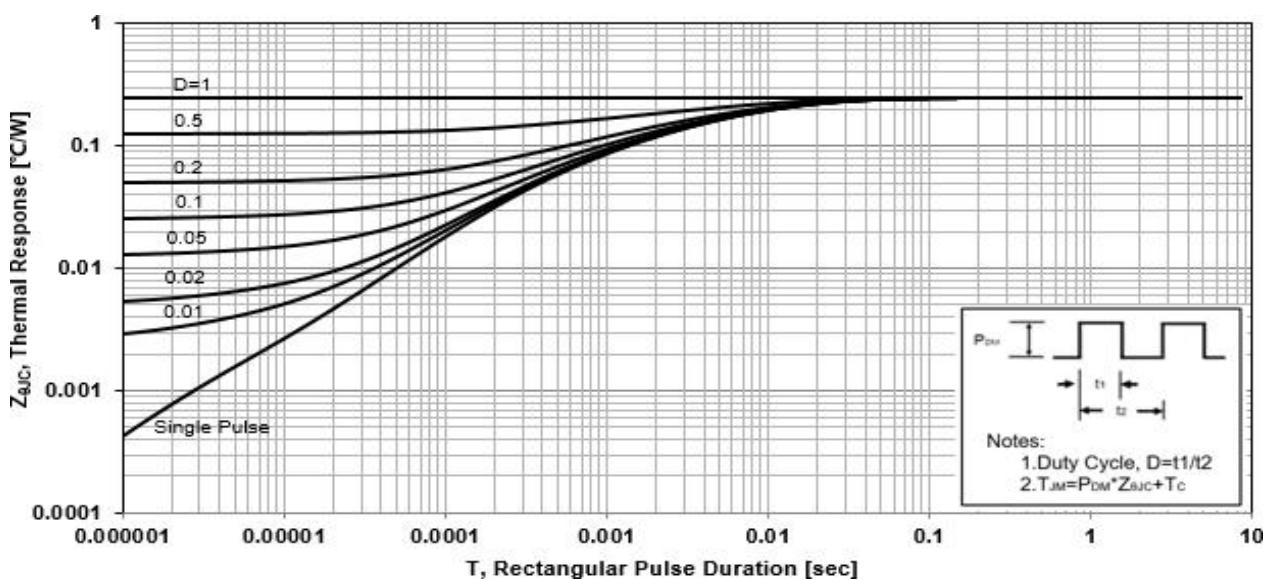
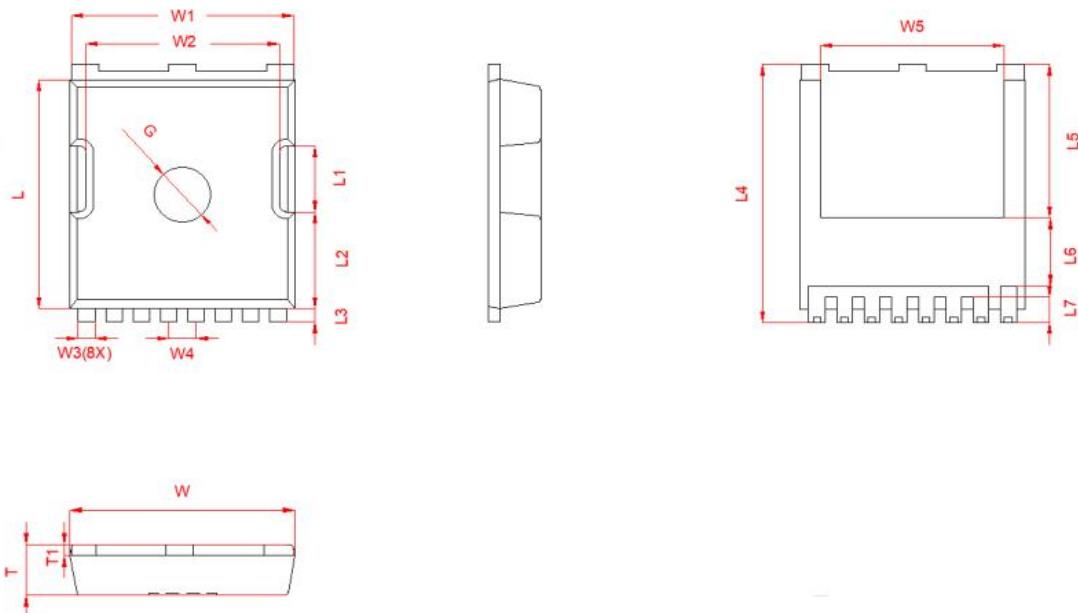


Figure 12. Transient Thermal Impedance

PACKAGE OUTLINES



Symbol	Size		Symbol	Size		Symbol	Size	
	Min	Max		Min	Max		Min	Max
W	9.7	10.1	L	10.28	10.58	L6	(3.1)	
W1	9.7	9.9	L1	(3.0)		L7	1.1	1.3
W2	(8.5)		L2	4.2	4.6	T	2.2	2.4
W3	0.6	0.85	L3	0.5	0.7	T1	0.4	0.6
W4	1.1	1.3	L4	11.48	11.88	G(Φ)	(2.5)	
W5	(8.1)		L5	(6.9)				

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