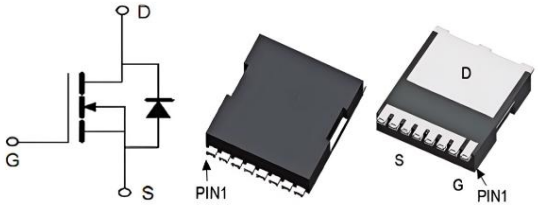
N-Channel Power MOSFET 100V/360A

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



TOLL

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	Tc = 25℃	ID	360	A
	Tc = 100℃		254.1	
Peak Drain Current, Pulsed 1)		IDM	1440	A
Single Pulse Avalanche Energy 2)		EAS	1806	mJ
Power Dissipation	Tc = 25℃	PD	500	W
Operating Junction and Storage Temperature Range		TJ, Tstg	-55~150	℃

THERMAL CHARACTERISTICS

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Case 3)	RθJC	0.25	℃/W
Thermal Resistance from Junction to Ambient 3)	RθJA	62.5	℃/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, Rg = 25 Ω,VDD = 50V, VGS = 10V.
3)Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.

CHARACTERISTICS (at TJ = 25°C unless otherwise specified)

Parameter	Symbol	Min.	Type.	Max.	Unit
STATIC PARAMETERS					
Drain-Source Breakdown Voltage at ID=250μA	BVDSS	100			V
Drain-Source Leakage Current at VDS=100V	IDSS			1	μA
Gate Leakage Current at VGS=± 20V	IGSS			±100	nA
Gate-Source Threshold Voltage at VDS=VGS, ID=250μA	VGS(th)	2		4	V
Drain-Source On-State Resistance at VGS=10V, ID=50A	RDS(on)		1.0	1.3	mΩ
DYNAMIC PARAMETERS					
Input Capacitance at VGS=0V, VDS=50V, f =1MHz	Ciss		14200		pF
Output Capacitance at VGS=0V, VDS=50V, f =1MHz	Coss		4000		pF
Reverse Transfer Capacitance at VGS=0V, VDS=50V, f =1MHz	Crss		935		pF
Gate charge total at VDS=50V, ID=50A, VGS=10V	Qg		240		nC
Gate to Source Charge at VDS=50V, ID=50A, VGS=10V	Qgs		64		nC
Gate to Drain Charge at VDS=50V, ID=50A, VGS=10V	Qgd		64		nC
Turn-On Delay Time at VGS=10V, VDS=50V, ID=50A	td(on)		45		nS
Turn-On Rise Time at VGS=10V, VDS=50V, ID=50A	tr		51		nS
Turn-Off Delay Time at VGS=10V, VDS=50V, ID=50A	td(off)		123		nS
Turn-Off Fall Time at VGS=10V, VDS=50V, ID=50A	tf		52		nS
Body-Diode PARAMETERS					
Drain-Source Diode Forward Voltage at IS=1A, VGS=0V	VSD			1.2	V

CHARACTERISTICS DIAGRAMS

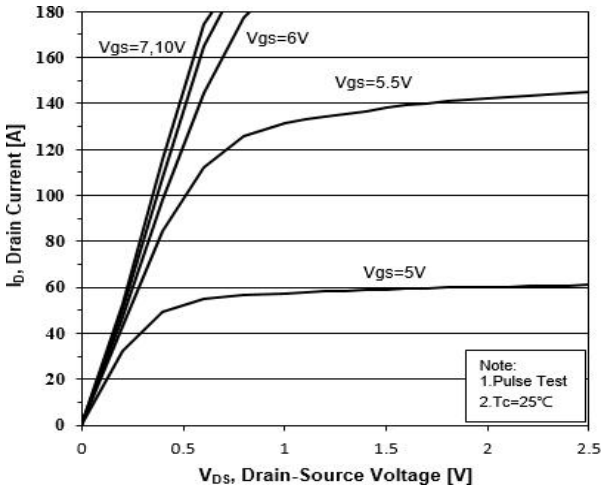


Figure 1. Typical Output Characteristics

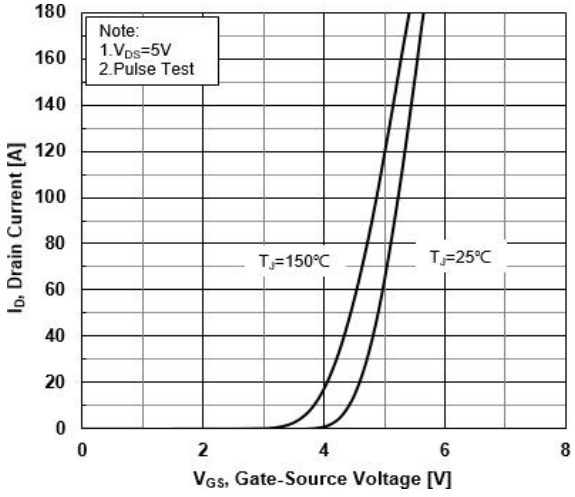


Figure 2.Typical Transfer Characteristics

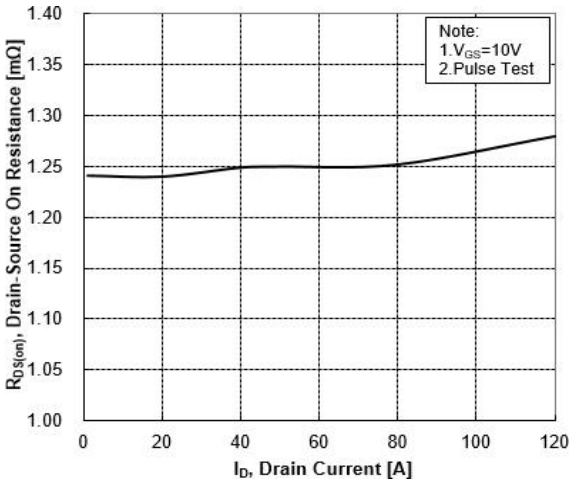


Figure 3. Drain-Source On-Resistance vs Drain

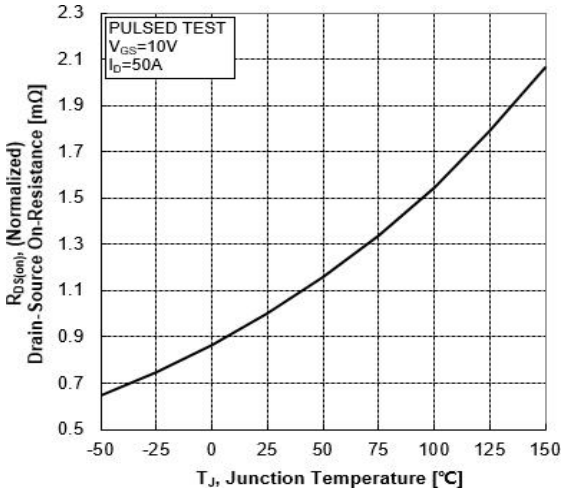


Figure 4. Normalized On-Resistance vs Junction

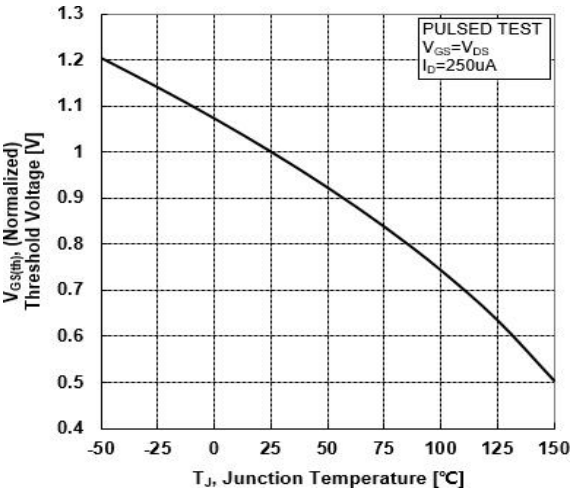


Figure 5. Normalized Threshold Voltage vs Junction Temperature

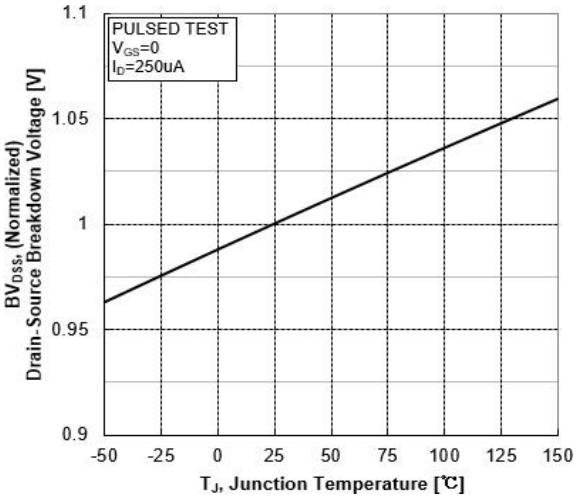


Figure 6. Normalized Breakdown Voltage vs Junction Temperature

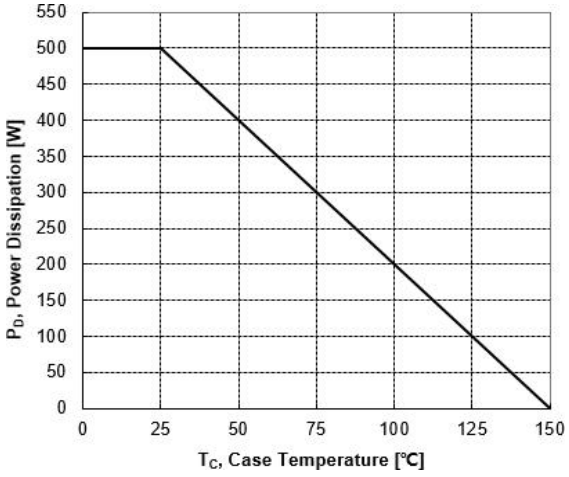


Figure 7.Maximum Power Dissipation vs Case Temperature

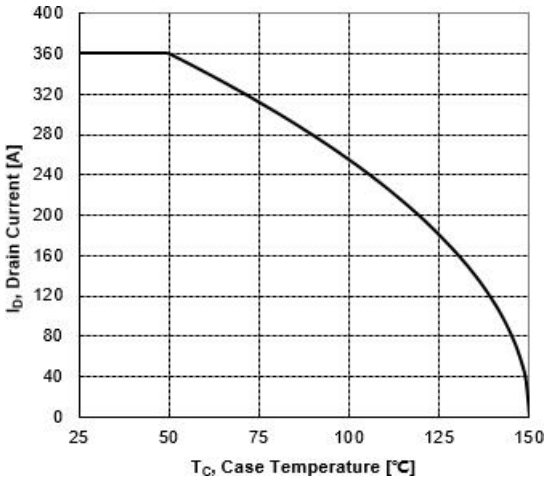


Figure 8.Maximum Continuous Drain Current vs Case Temperature

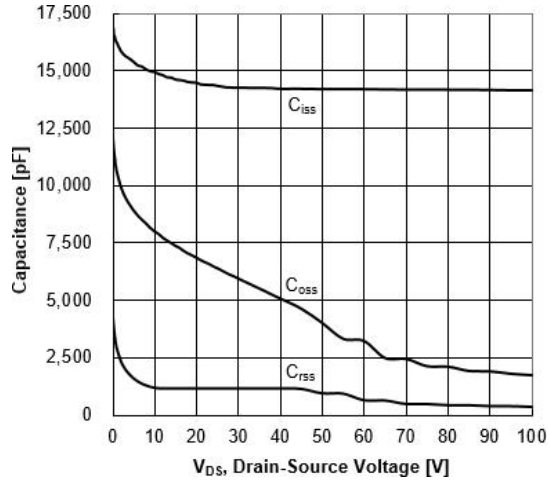


Figure 9. Capacitance Characteristics

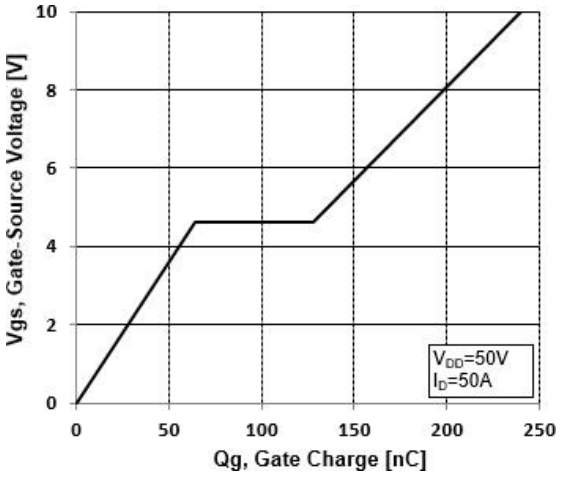


Figure 10. Typical Gate Charge vs Gate-Source

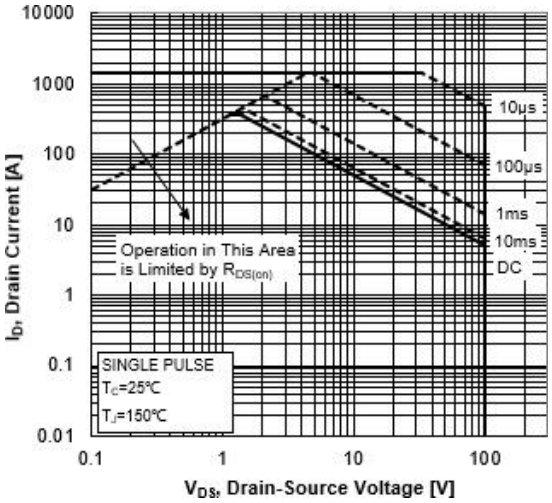


Figure11. Safe Operating Area

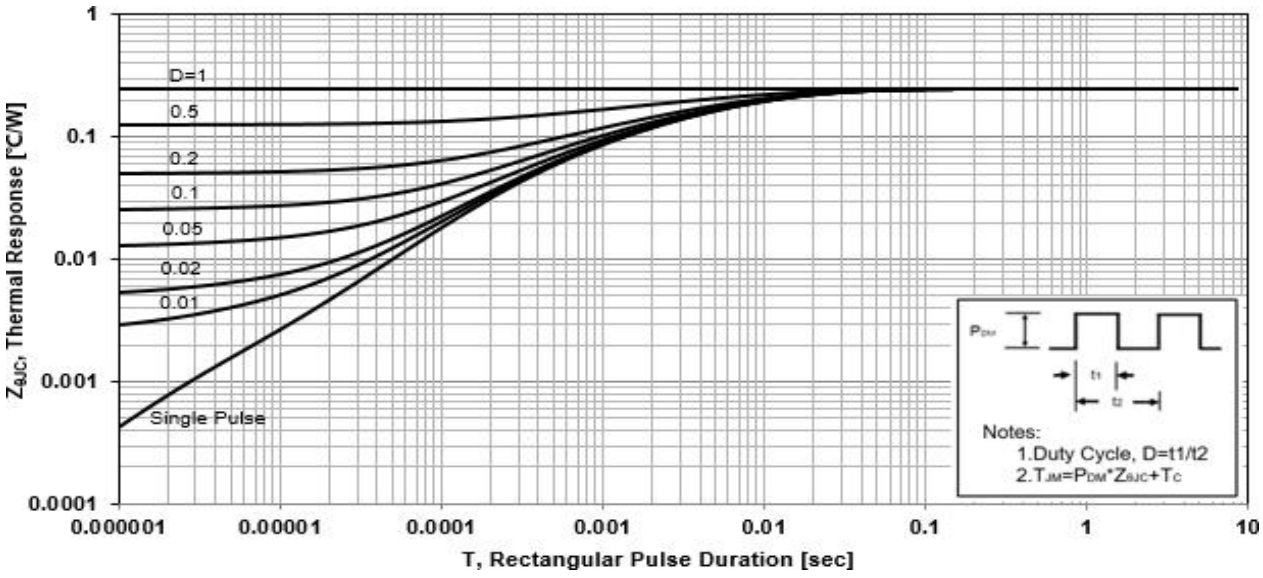
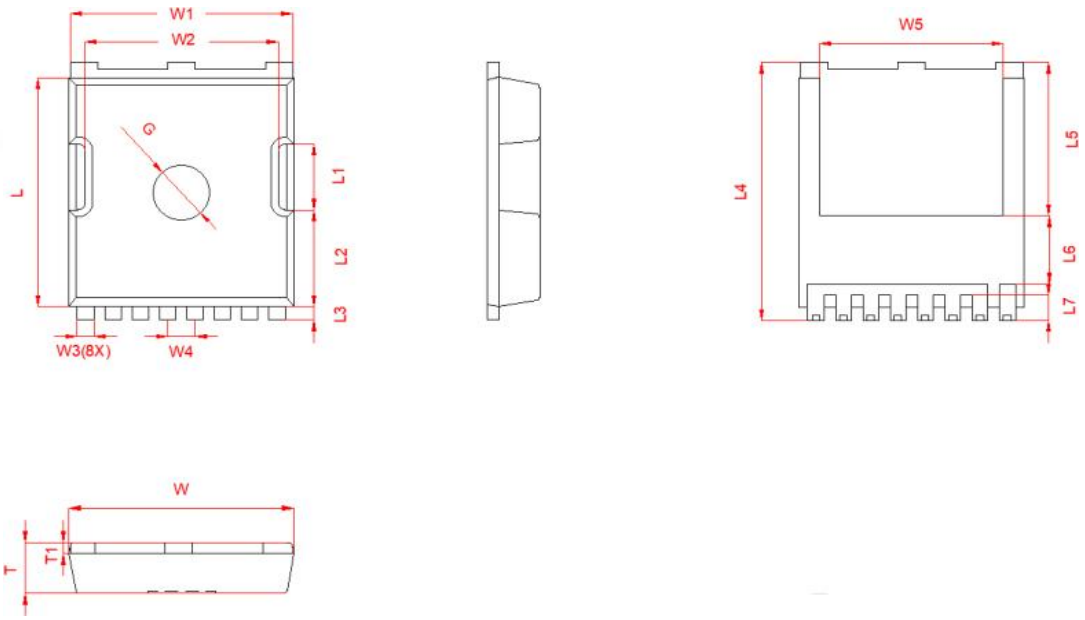


Figure 12. Transient Thermal Impedance

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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