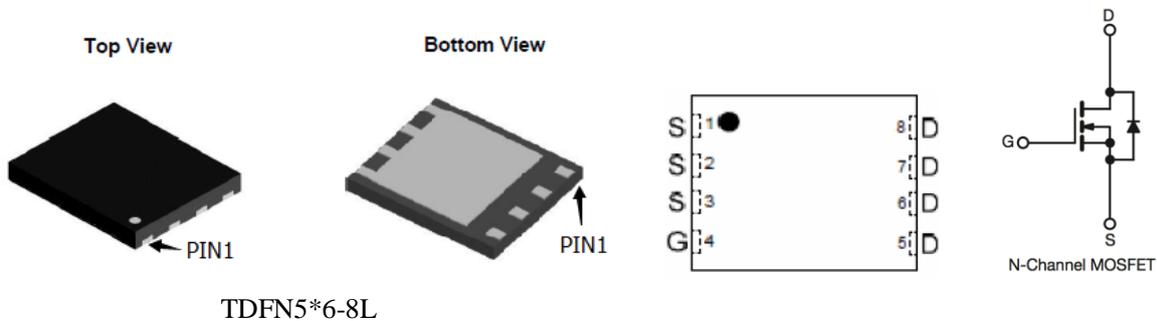


**N-Channel Enhancement Mode Power MOSFET**
**● Features**
 $V_{DS} = 60V,$ 
 $I_D = 150A$ 
 $R_{DS(ON)} @ V_{GS} = 10V, \text{ TYP } 2.6m\Omega$ 
 $R_{DS(ON)} @ V_{GS} = 4.5V, \text{ TYP } 3.8m\Omega$ 
**● General Description**

- Notebook AC-in load switch
- Battery protection charge/discharge

**● Pin Configurations**

**● Absolute Maximum Ratings @ $T_A=25^\circ\text{C}$  unless otherwise noted**

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		$V_{DSS}$	60	V
Gate-Source Voltage		$V_{GSS}$	$\pm 20$	V
Drain Current (Continuous) *AC	$T_C=25^\circ\text{C}$	$I_D$	150	A
	$T_C=70^\circ\text{C}$		120	
Drain Current (Pulse) *B		$I_{DM}$	200	A
Power Dissipation	$T_C=25^\circ\text{C}$	$P_D$	83	W
Operating Temperature/ Storage Temperature		$T_J/T_{STG}$	-55~150	$^\circ\text{C}$

**● Thermal Resistance Ratings**

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient	$t \leq 10 \text{ s}$	$R_{thJA}$	18	23	$^\circ\text{C/W}$
Maximum Junction-to-Case (Drain)	Steady State	$R_{thJC}$	1	1.5	

**N-Channel Enhancement Mode Power MOSFET**

**● Electrical Characteristics @ $T_A=25^\circ\text{C}$  unless otherwise noted**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60	--	--	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 60V, V_{GS} = 0V$	--	--	1	$\mu A$
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS} = V_{DS}, I_{DS} = 250\mu A$	1	1.7	2.5	V
Gate Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$	--	--	$\pm 100$	nA
Drain-Source On-state Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$	--	2.6	3.3	m $\Omega$
	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 20A$	--	3.8	4.8	m $\Omega$
Diode Forward Voltage	$V_{SD}$	$I_{SD} = 1A, V_{GS} = 0V$	--	0.77	1.2	V
Diode Forward Current *AC	$I_S$	$T_C = 25^\circ\text{C}$	--	--	120	A
<b>Switching</b>						
Total Gate Charge	$Q_g$	$V_{DS} = 30V, V_{GS} = 10V, I_D = 10A$	--	45	--	nC
Gate-Source Charge	$Q_{gs}$		--	9	--	nC
Gate-Drain Charge	$Q_{gd}$		--	5	--	nC
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 30V, R_L = 3\Omega, I_D = 10A,$ $V_{GEN} = 10V, R_g = 1\Omega$	--	15	--	ns
Turn-on Rise Time	$t_r$		--	9	--	ns
Turn-off Delay Time	$t_{d(off)}$		--	32	--	ns
Turn-Off Fall Time	$t_f$		--	8	--	ns
<b>Dynamic</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 30V, V_{GS} = 0V, f = 1.0\text{MHz}$	--	4220	--	pF
Output Capacitance	$C_{oss}$		--	1406	--	pF
Reverse Transfer Capacitance	$C_{rss}$		--	113	--	pF

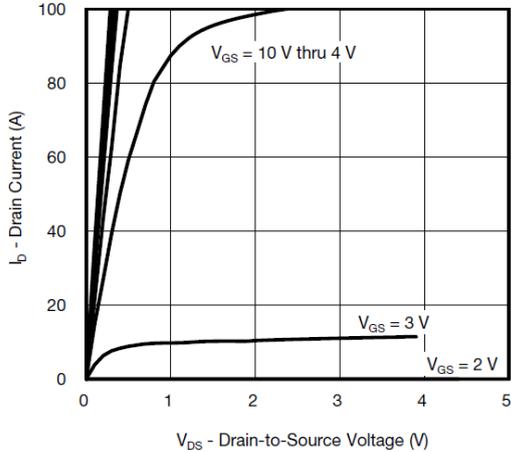
A: The value of  $R_{\theta JA}$  is measured with the device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with  $T_A=25^\circ\text{C}$ . The value in any given application depends on the user's specific board design.

B: Repetitive rating, pulse width limited by junction temperature.

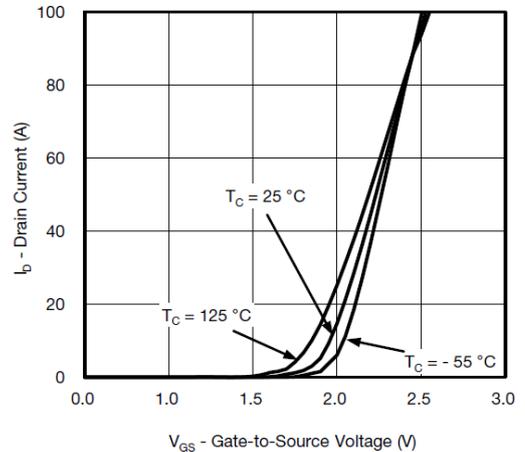
C: The current rating is based on the  $t \leq 10s$  junction to ambient thermal resistance rating, Package limited 120A.

**N-Channel Enhancement Mode Power MOSFET**

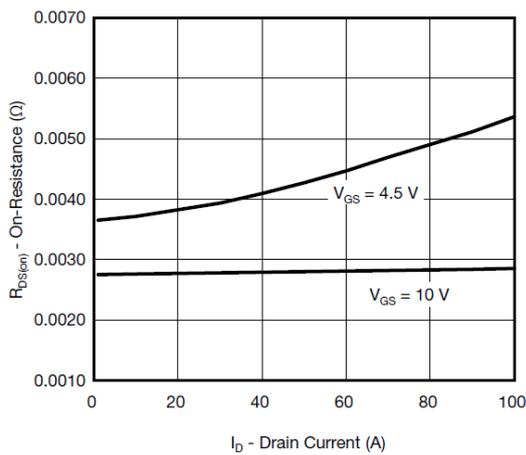
● **Typical Performance Characteristics (T<sub>J</sub> = 25 °C, unless otherwise noted)**



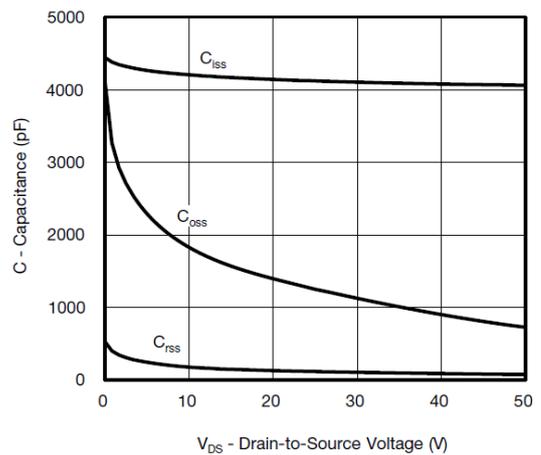
**Output Characteristics**



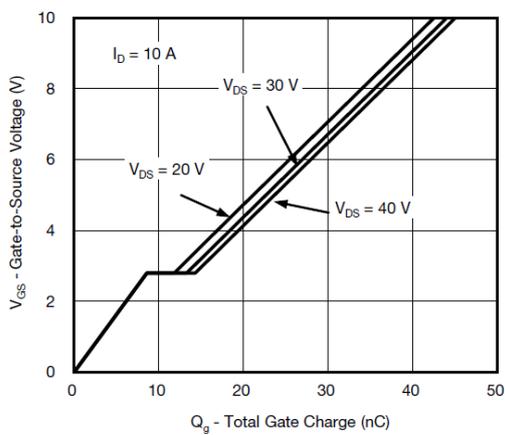
**Transfer Characteristics**



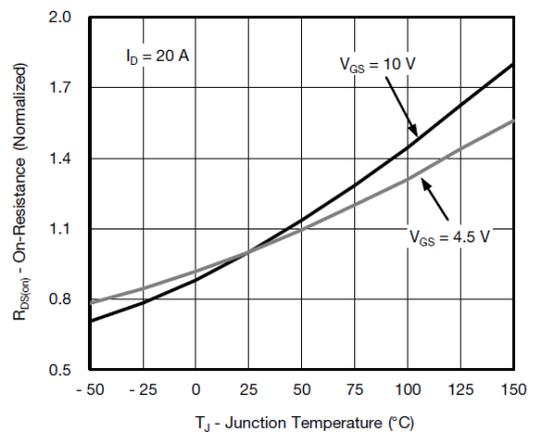
**On-Resistance vs. Drain Current and Gate Voltage**



**Capacitance**

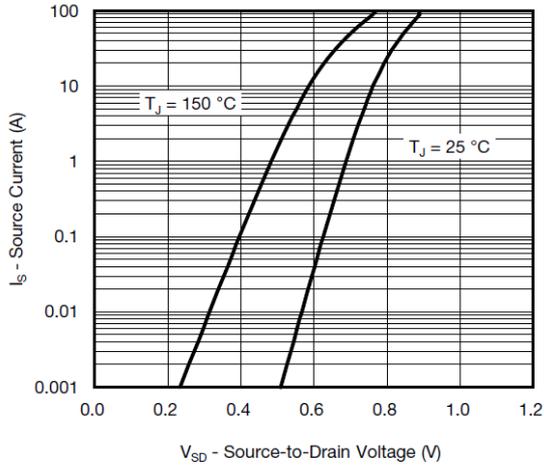


**Gate Charge**

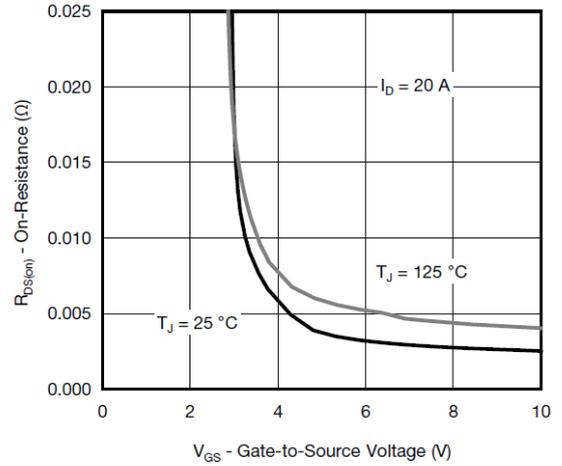


**On-Resistance vs. Junction Temperature**

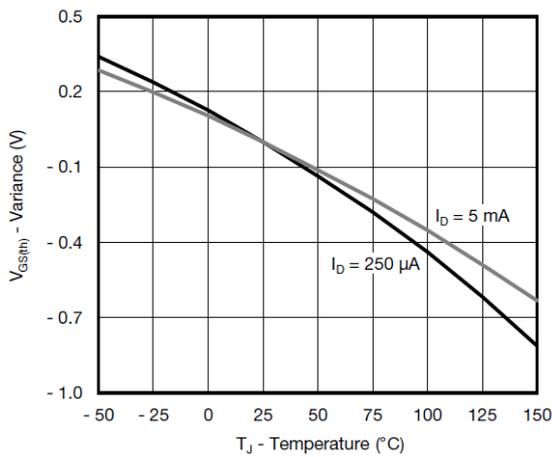
N-Channel Enhancement Mode Power MOSFET



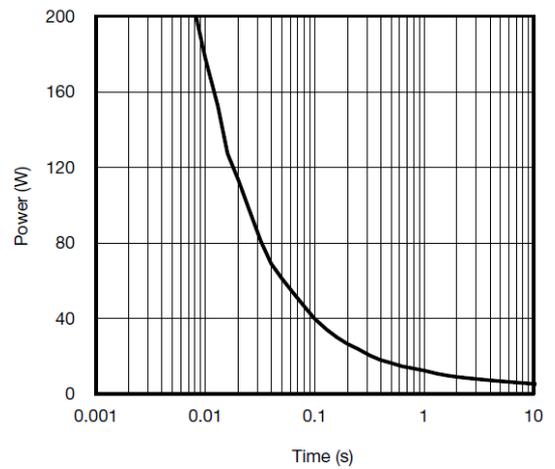
Source-Drain Diode Forward Voltage



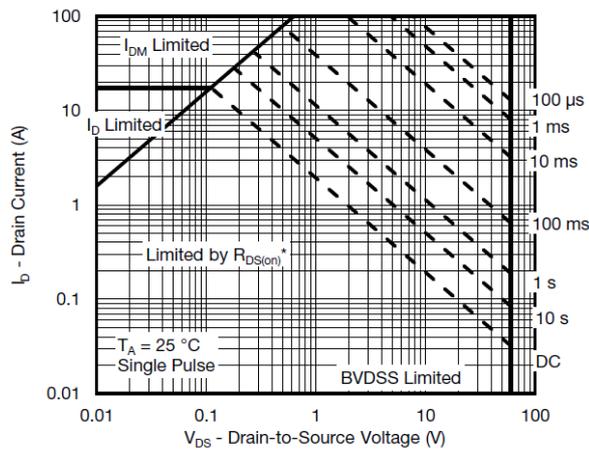
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



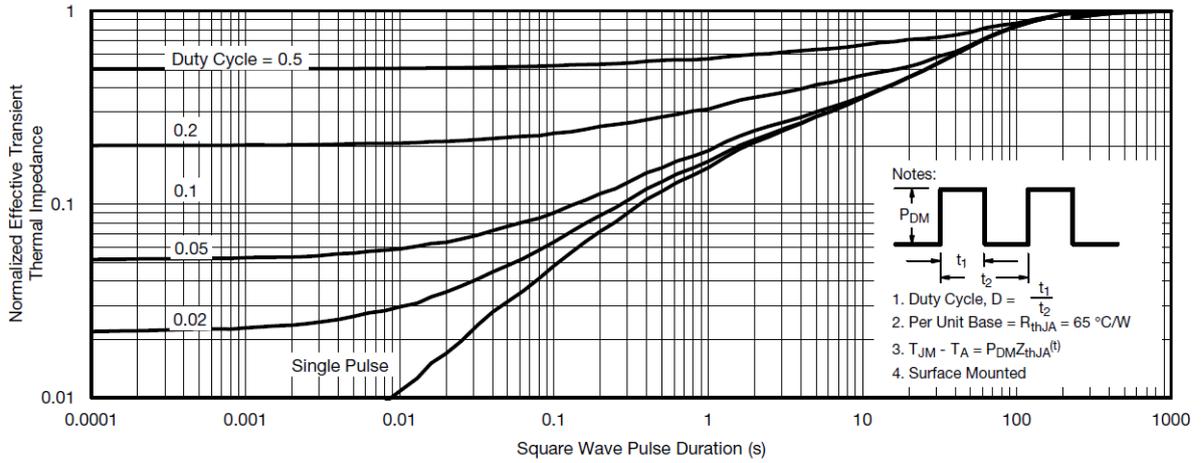
Single Pulse Power, Junction-to-Ambient



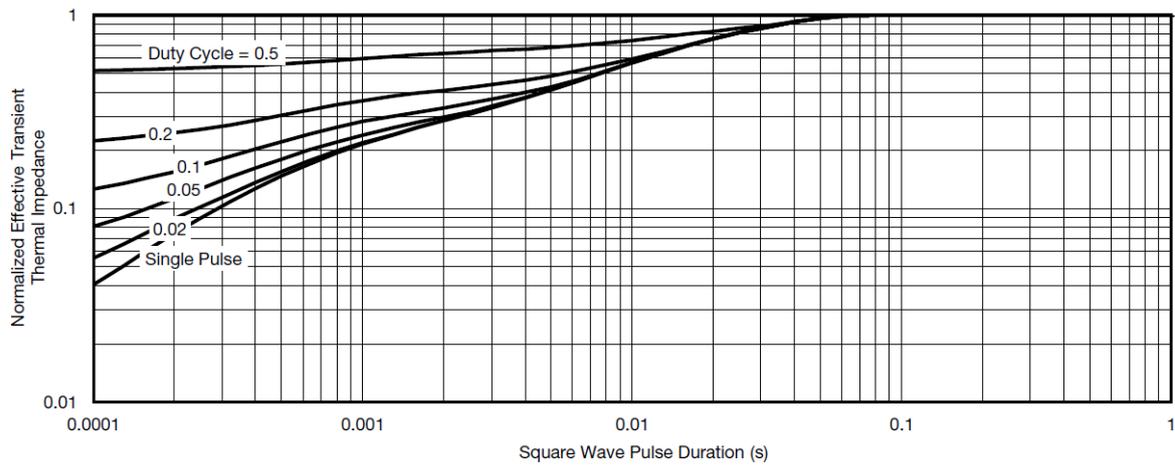
\*  $V_{GS} >$  minimum  $V_{GS}$  at which  $R_{DS(on)}$  is specified

Safe Operating Area, Junction-to-Ambient

N-Channel Enhancement Mode Power MOSFET



Normalized Thermal Transient Impedance, Junction-to-Ambient

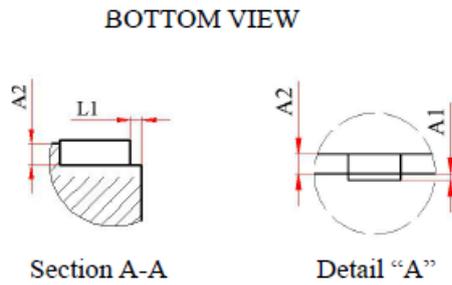
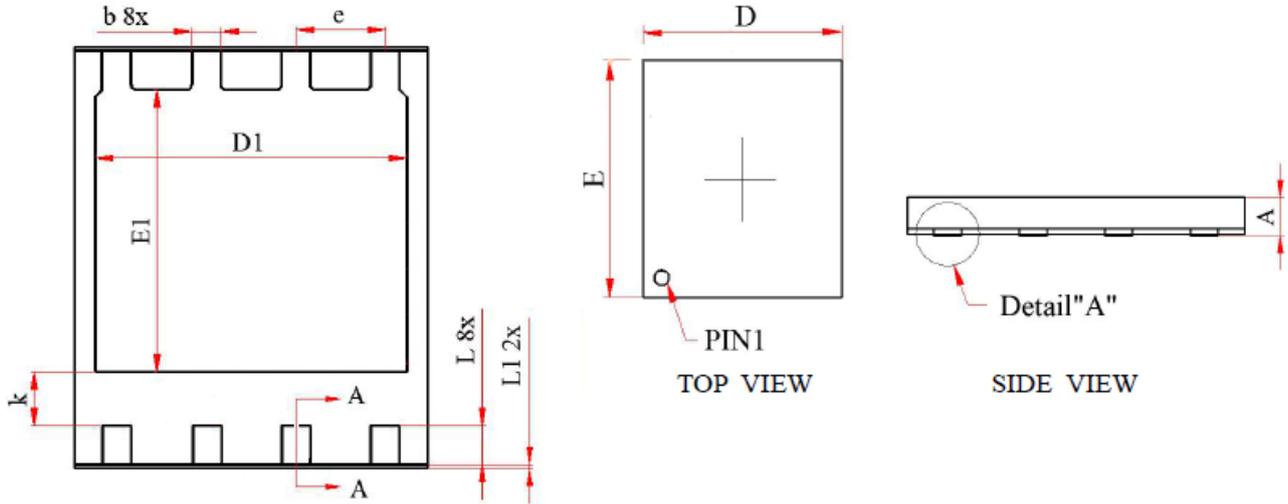


Normalized Thermal Transient Impedance, Junction-to-Case

N-Channel Enhancement Mode Power MOSFET



● Package Information



Symbol	Dimension In Millimeters			Dimension In Inches		
	Normal	Min	Max	Normal	Min	Max
A	--	0.500	0.600	--	0.020	0.024
A1	--	--	0.005	--	--	0.000
A2	--	0.100	0.250	--	0.004	0.010
D	5.000	4.900	5.100	0.197	0.193	0.201
E	6.000	5.900	6.100	0.236	0.232	0.240
D1	4.420	4.320	4.520	0.174	0.170	0.178
E1	4.020	3.920	4.120	0.158	0.154	0.162
b	0.410	0.360	0.460	0.016	0.014	0.018
L	0.560	0.510	0.610	0.022	0.020	0.024
L1	0.050	0.010	0.090	0.002	0.000	0.004
k	0.760 REF			0.030 REF		
e	1.270 BSC			0.050 BSC		