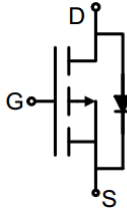
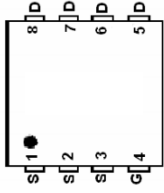
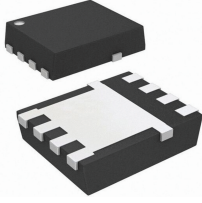


P-Channel Enhancement Mode Power MOSFET

<p>Description</p> <p>The G65P06D5 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge. It can be used in a wide variety of applications.</p> <p>General Features</p> <ul style="list-style-type: none"> ● V_{DS} -60V ● I_D (at $V_{GS} = -10V$) -60A ● $R_{DS(ON)}$ (at $V_{GS} = -10V$) < 18mΩ ● 100% Avalanche Tested ● RoHS Compliant <p>Application</p> <ul style="list-style-type: none"> ● Power switch ● DC/DC converters 		 <p>Schematic diagram</p>  <p>Marking and pin assignment</p>  <p>DFN5*6</p>	
Device	Package	Marking	Packaging
G65P06D5	DFN5*6-8L	G65P06	2500pcs/Reel

Absolute Maximum Ratings $T_C = 25^{\circ}C$, unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-60	V
Continuous Drain Current	I_D	-60	A
Pulsed Drain Current (note1)	I_{DM}	-260	A
Gate-Source Voltage	V_{GS}	±20	V
Power Dissipation	P_D	130	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 To 150	°C

Thermal Resistance

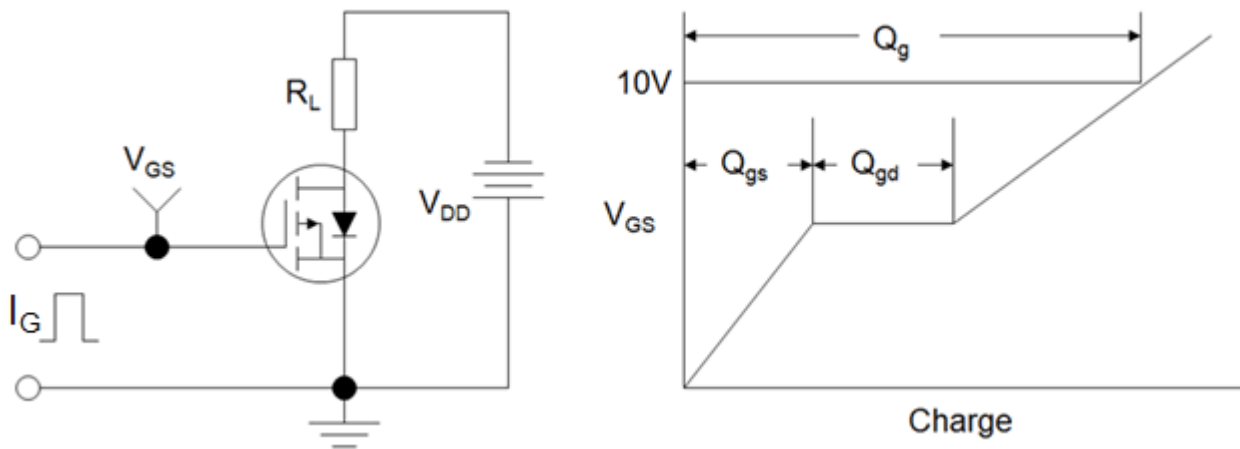
Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Case (note3)	R_{thJC}	1.15	°C/W

Specifications $T_J = 25^{\circ}\text{C}$, unless otherwise noted						
Parameter	Symbol	Test Conditions	Value			Unit
			Min.	Typ.	Max.	
Static Parameters						
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	μA
Gate-Source Leakage	I_{GSS}	$V_{GS} = \pm 20V$	--	--	± 100	nA
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-2	-2.6	-3.5	V
Drain-Source On-Resistance (note2)	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -20A$	--	13	18	m Ω
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -20A$	--	25	--	S
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{GS} = 0V,$ $V_{DS} = -25V,$ $f = 1.0MHz$	--	5814	--	pF
Output Capacitance	C_{oss}		--	483	--	
Reverse Transfer Capacitance	C_{rss}		--	234	--	
Total Gate Charge	Q_g	$V_{DD} = -30V,$ $I_D = -20A,$ $V_{GS} = -10V$	--	75	--	nC
Gate-Source Charge	Q_{gs}		--	16	--	
Gate-Drain Charge	Q_{gd}		--	19	--	
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -30V,$ $I_D = -20A,$ $R_G = 3\Omega$	--	18	--	ns
Turn-on Rise Time	t_r		--	20	--	
Turn-off Delay Time	$t_{d(off)}$		--	55	--	
Turn-off Fall Time	t_f		--	35	--	
Drain-Source Body Diode Characteristics						
Body Diode Voltage (note2)	V_{SD}	$I_S = -20A, V_{GS} = 0V$	--	--	-1.2	V
Reverse Recovery Time	T_{rr}	$I_S = -20A, V_{GS} = 0V$ $di/dt = -100A/\mu s$	--	49	--	nS
Reverse Recovery Charge	Q_{rr}		--	71	--	nC

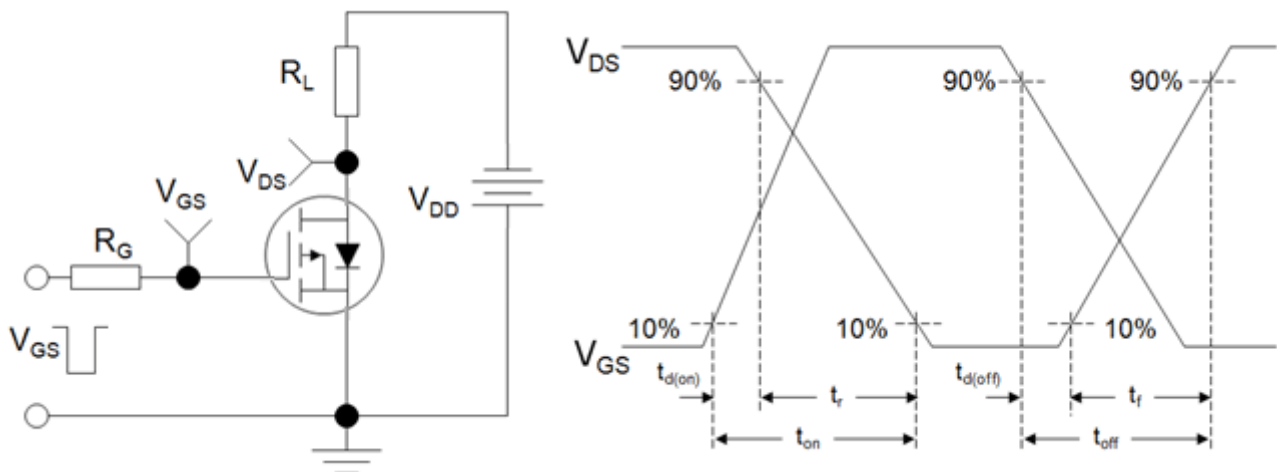
Notes

- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse test
- 3.Surface mounted on 1 in² copper pad of FR4 board

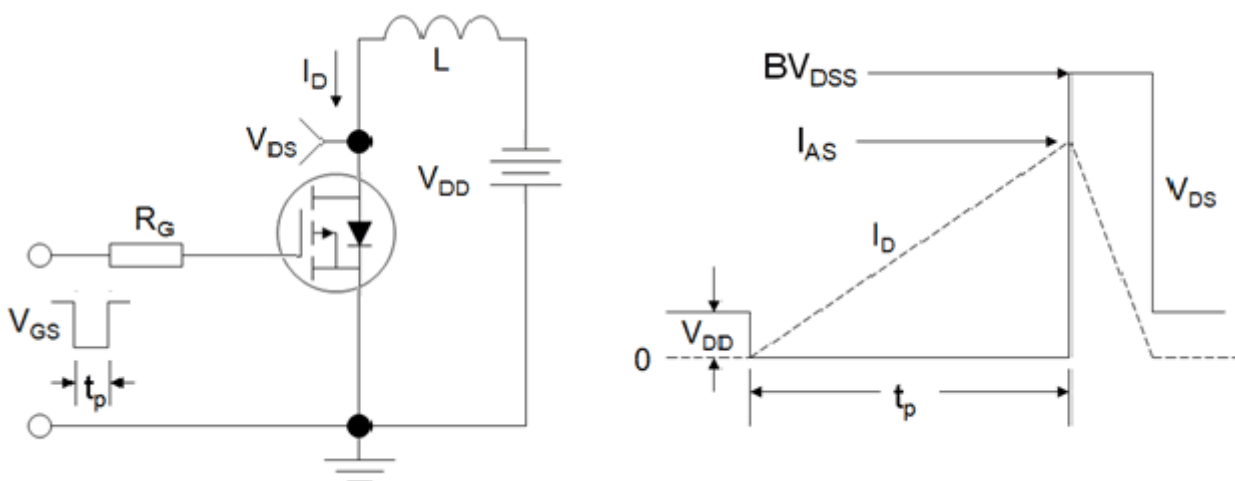
Gate Charge Test Circuit



Switch Time Test Circuit



EAS Test Circuit



Typical Characteristics $T_J = 25^\circ\text{C}$, unless otherwise noted

Figure 1. Output Characteristics

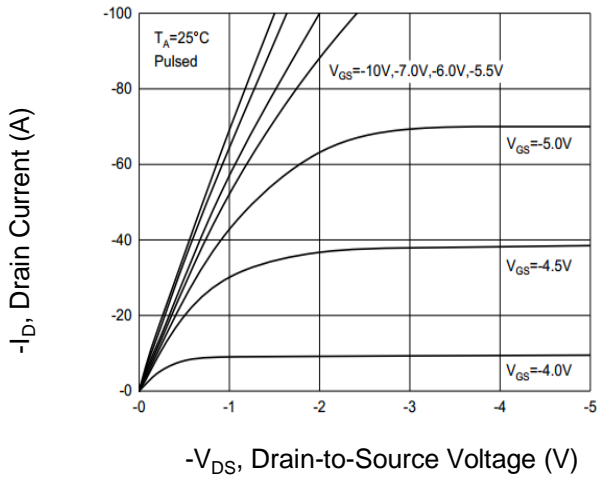


Figure 2. Transfer Characteristics

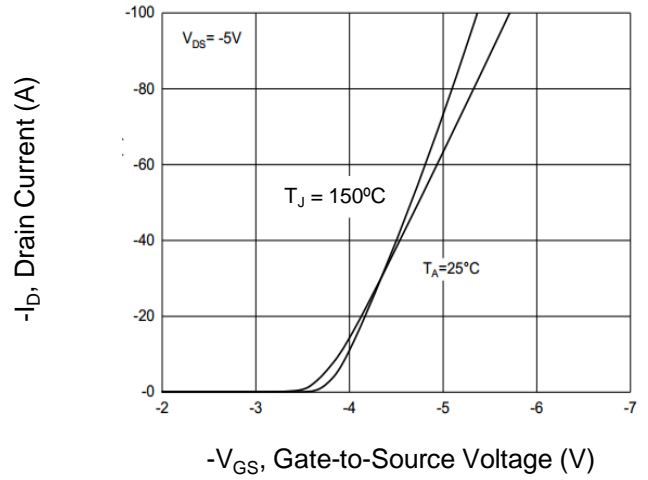


Figure 3. Drain Source On Resistance

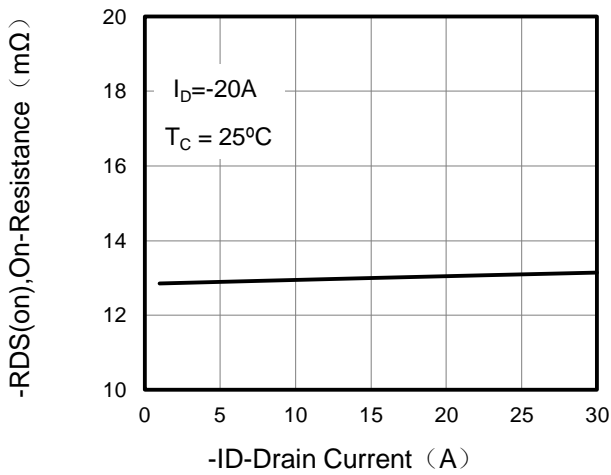


Figure 4. Gate Charge

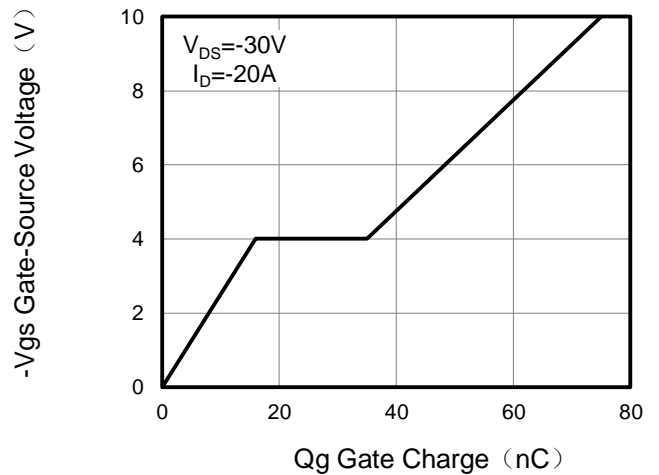


Figure 5. Capacitance vs Vds

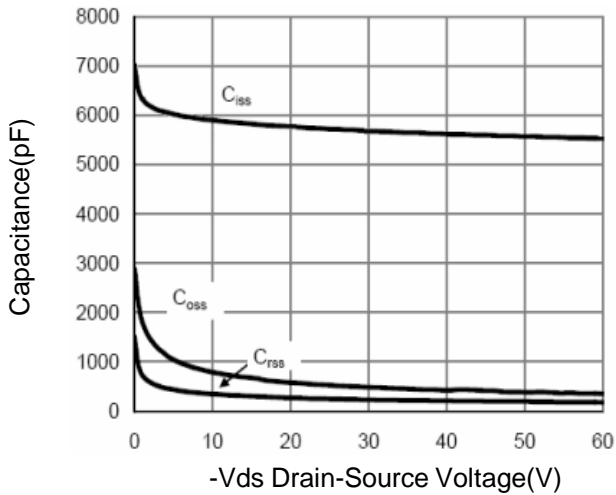
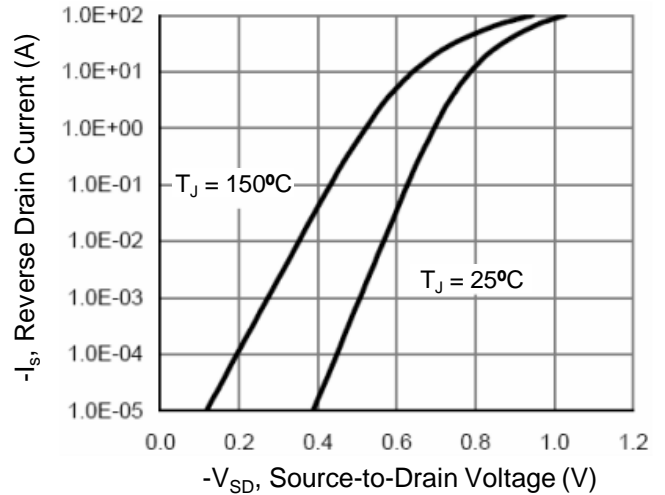


Figure 6. Source-Drain Diode Forward



Typical Characteristics $T_J = 25^\circ\text{C}$, unless otherwise noted

Figure 7. Drain-Source On-Resistance

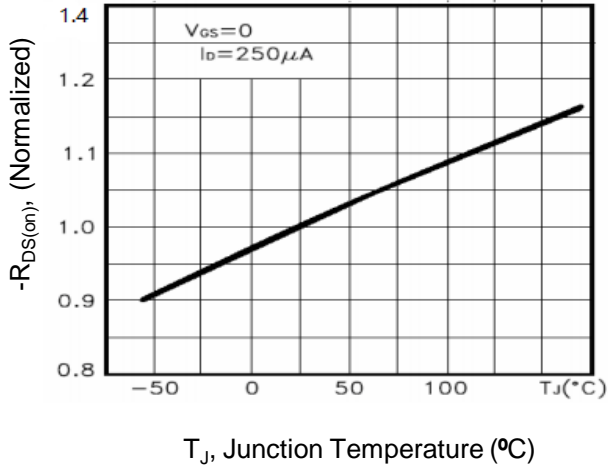


Figure 8. Safe Operation Area

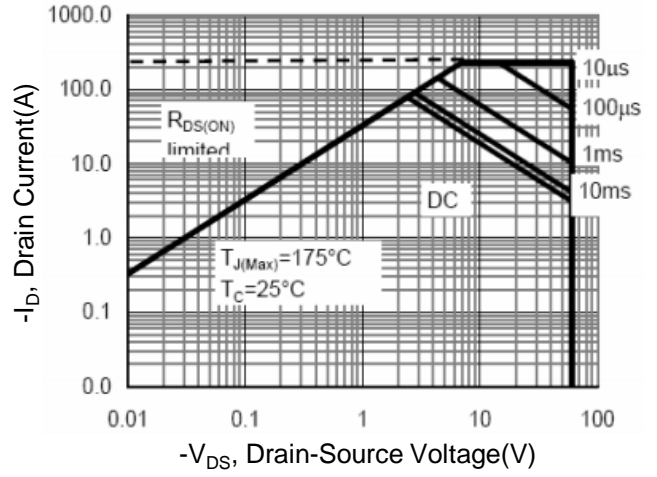
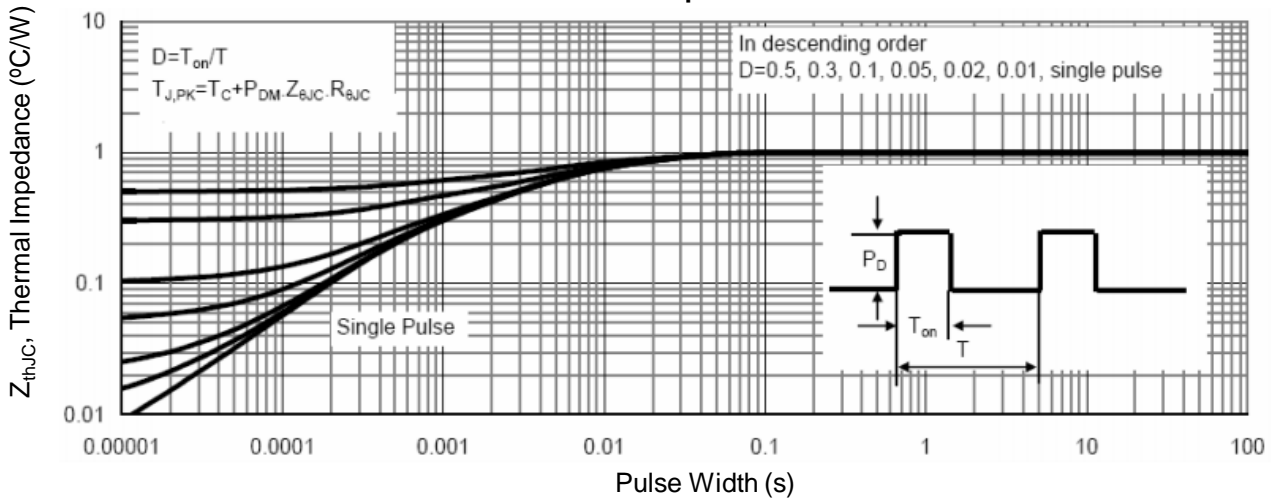
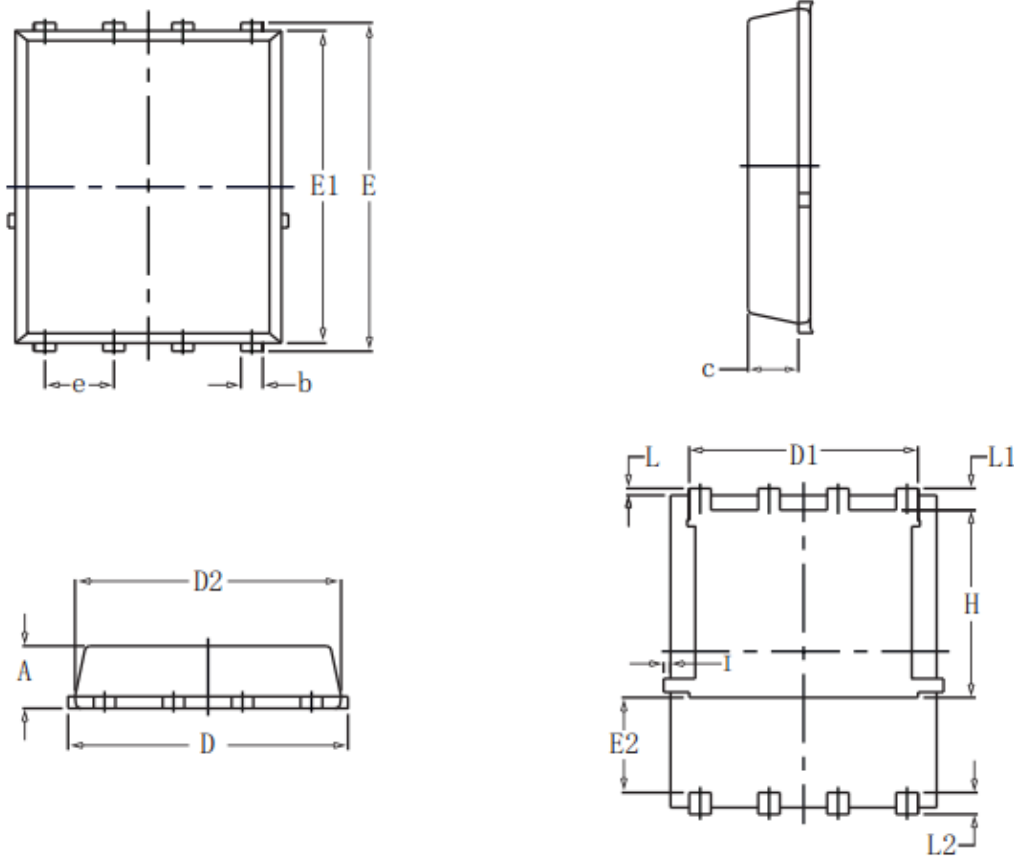


Figure 9. Normalized Maximum Transient Thermal Impedance



DFN5×6-8L Package Information



SYMBOL	COMMON			
	MM		INCH	
	MIN	MAX	MIN	MAX
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.824	0.970	0.0324	0.0382
D	4.80	5.40	0.1890	0.2126
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.00	0.1890	0.1969
E	5.59	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	1.60	-	0.0630	-
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.50	0.0150	0.0197
H	3.30	3.50	0.1299	0.1378
I	-	0.18	-	0.0070