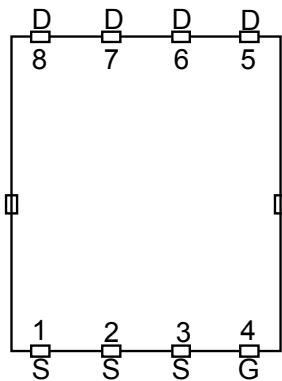


Description

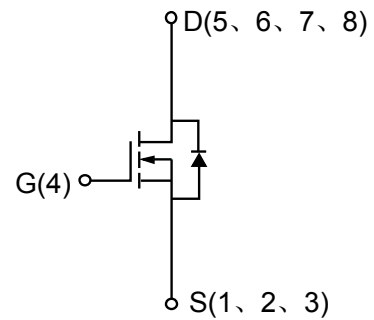
The MOSFET provide the best combination of fast switching, low on-resistance and cost-effectiveness.

MOSFET Product Summary		
V _{DS} (V)	R _{DS(on)} (mΩ)	I _D (A)
30	3.7@ V _{GS} =4.5V	60

Top View (PDFN5*6-8L)



Internal Structure



Absolute maximum rating@25°C

Parameter	Symbol	Maximum	Units	
Drain-Source Voltage	V _{DS}	30	V	
Gate-Source Voltage	V _{GS}	±20	V	
Continuous Drain Current	I _D	T _A =25°C	60	
		T _A =70°C	30	
Pulsed Drain Current	I _{DM}	80	A	
Maximum Power Dissipation	P _D	T _A =25°C	2.72	
		T _A =70°C	1.74	
Operating Junction and Storage Temperature Range	T _J	-55 to 150	°C	
Thermal Characteristics				
Parameter	Symbol	Typical	Maximum	Units
Thermal Resistance-Junction to Ambient	R _{θJA}	46	62.5	°C/W

Electrical characteristics per line @25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 250\mu A, V_{GS} = 0V$	30		-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1		3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 15A$	-	2.5	3.9	m Ω
		$V_{GS} = 4.5V, I_D = 10A$	-	3.7	4.9	
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = 15A$		0.8		V
Total Gate Charge	Qg	$V_{GS} = 4.5V, V_{DS} = 15V, I_D = 10A$		43		nC
Total Gate Charge	Qg	$V_{GS} = 10V, V_{DS} = 15V, I_D = 10A$		84		
Gate-Source Charge	Qgs			14		
Gate-Drain Charge	Qgd			21		
Input Capacitance	C_{ISS}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$	-	3880		pF
Output Capacitance	C_{OSS}		-	690		pF
Reverse Transfer Capacitance	C_{RSS}		-	225		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 15V, V_{GEN} = 10V, R_G = 1\Omega, R_L = 15\Omega, I_D = 1A$	-	27		ns
Turn-Off Delay Time	$t_{d(off)}$		-	85		ns
Turn-On Rise Time	t_r		-	20		ns
Turn-On Fall Time	t_f		-	18		ns
Gate-Resistance	Rg	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		1.5		Ω

Typical Characteristics

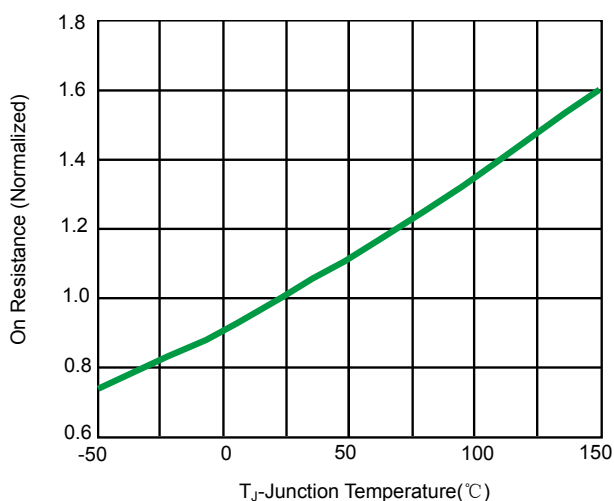


Fig 1. On Resistance vs. Junction Temperature

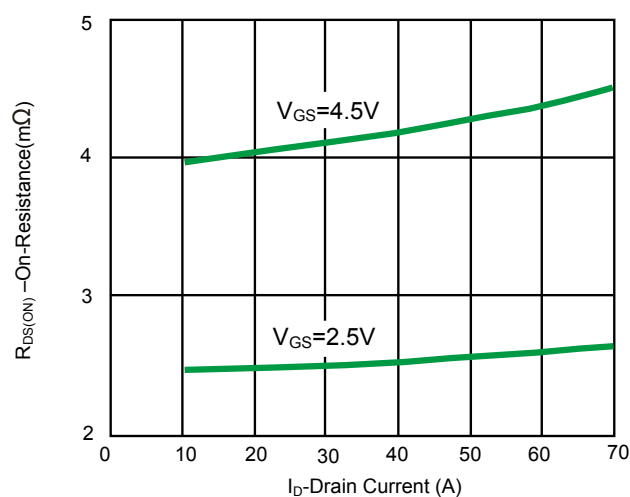


Fig 2. On-Resistance vs. Drain Current

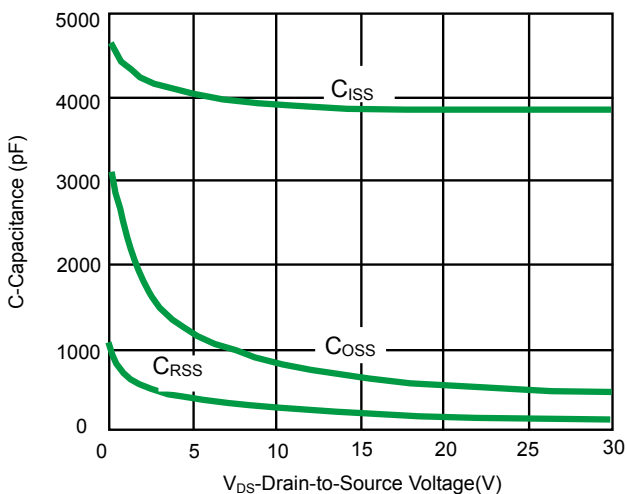


Fig 3. Capacitance

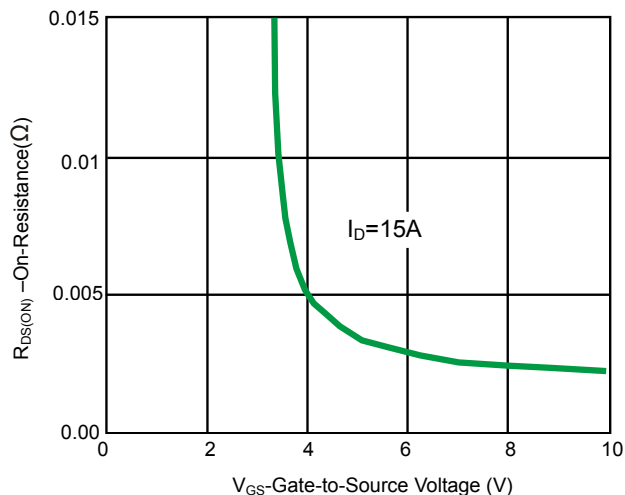


Fig 4. On-Resistance vs. Gate-to-Source Voltage

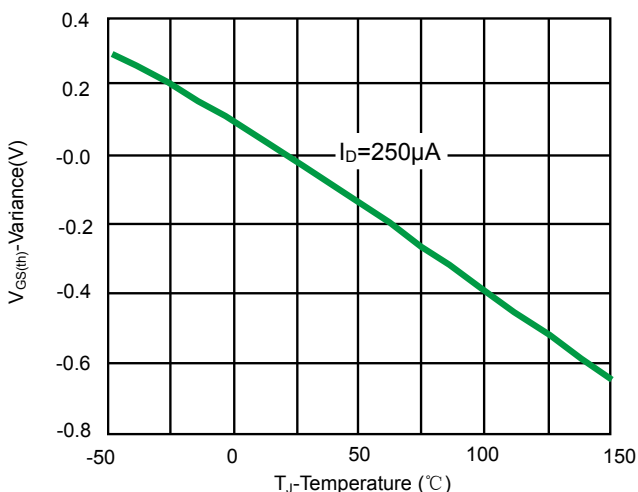


Fig 5. Threshold Voltage

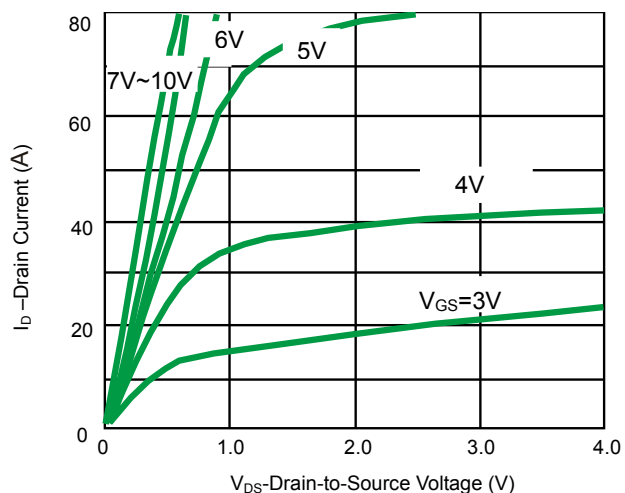


Fig 6. On-Region Characteristics

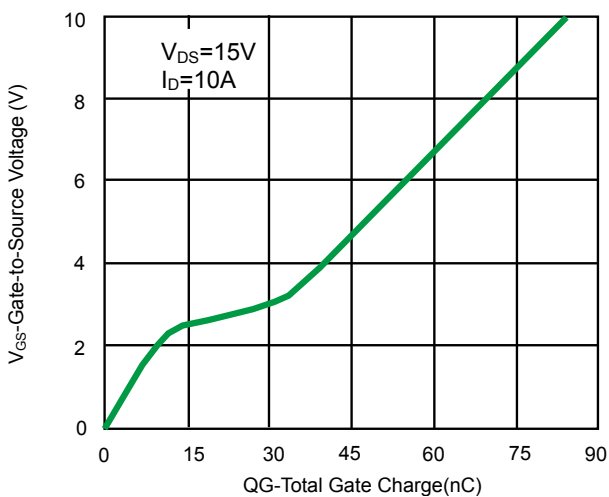


Fig 7. Gate Charge

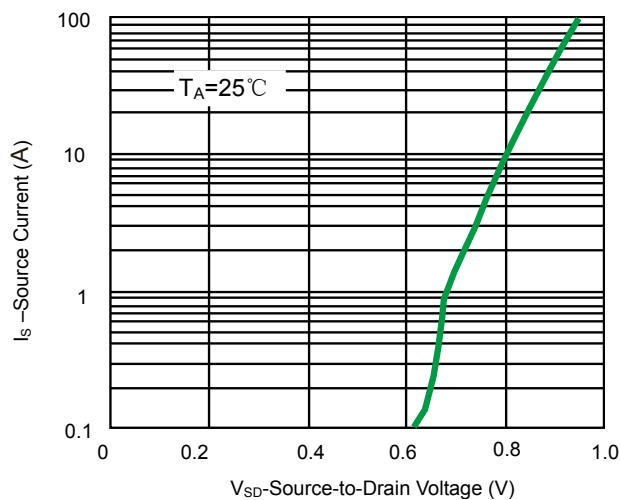


Fig 8. Source to Drain Diode Forward Voltage

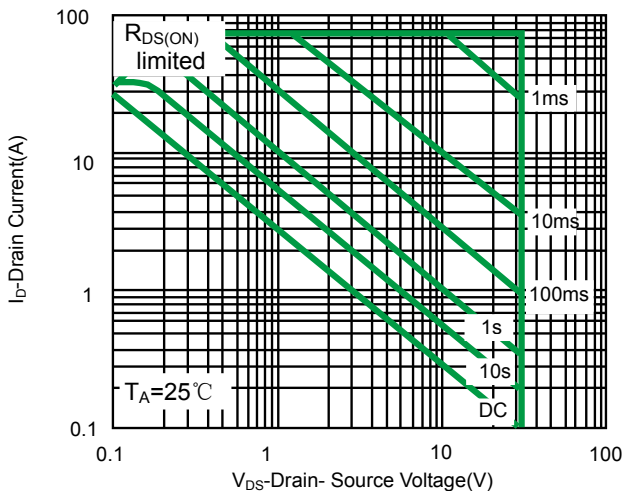


Fig 9. Maximum Forward Biased Safe Operating Area

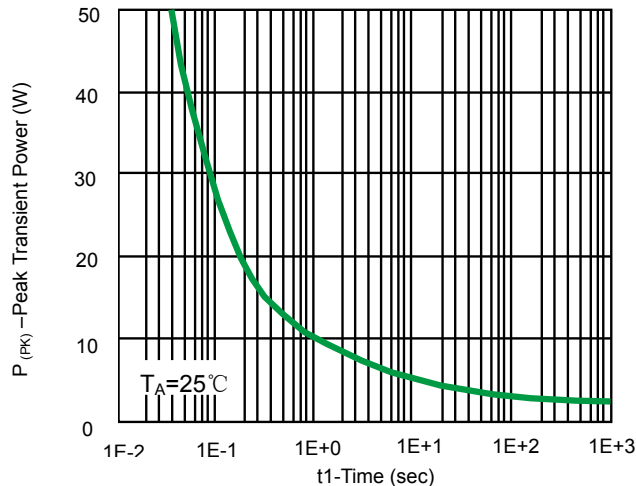


Fig 10. Single Pulse Maximum Power Dissipation

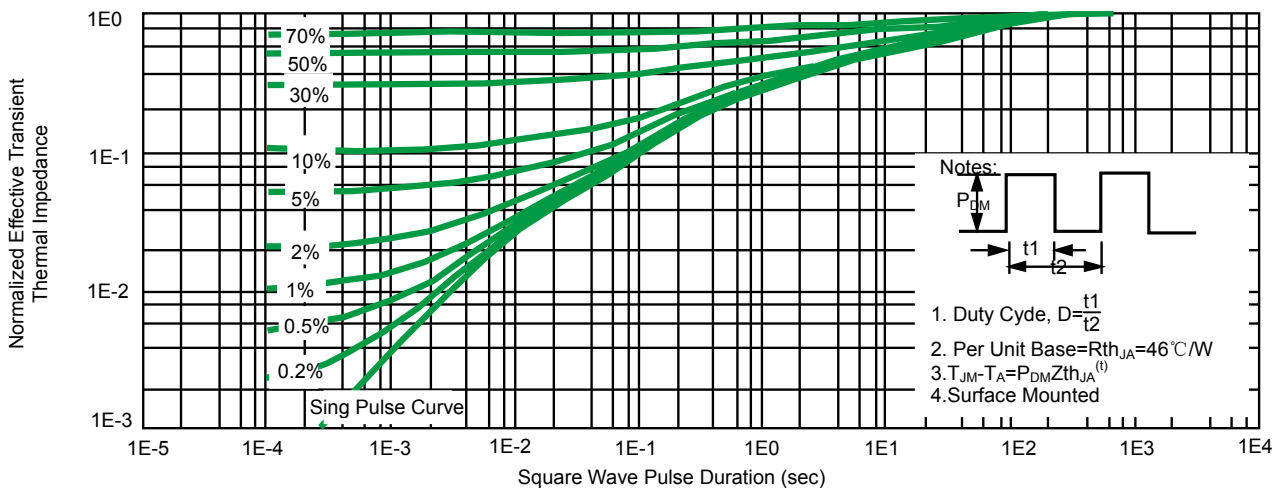
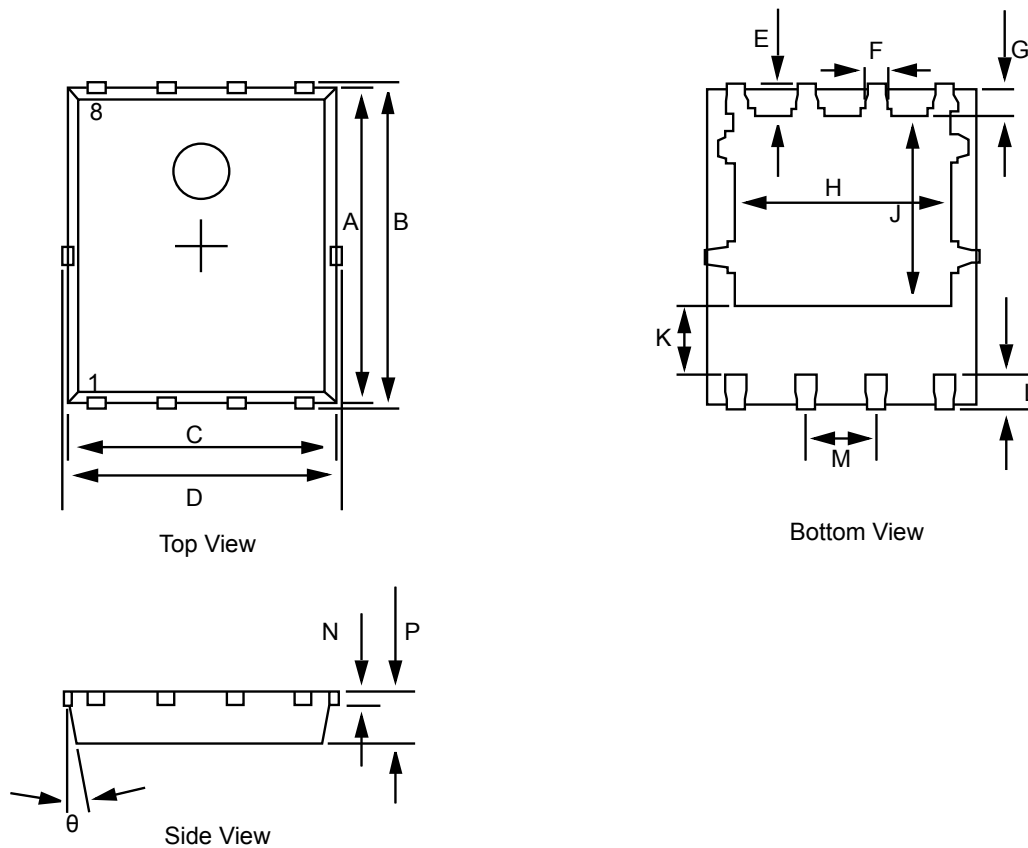



Fig 11. Normalized Thermal Transient Impedance, Junction-to-Ambient

Product dimension (PDFN5*6-8L)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	5.674	5.826	0.223	0.229
B	5.974	6.126	0.235	0.241
C	4.824	4.976	0.190	0.196
D	4.944	5.096	0.195	0.201
E	0.574	0.726	0.023	0.029
F	0.350	0.450	0.014	0.018
G	0.424	0.576	0.017	0.023
H	3.910	4.110	0.154	0.162
J	3.375	3.575	0.133	0.141
K	1.190	1.390	0.047	0.055
L	0.559	0.711	0.022	0.028
M	1.270TYP.		0.050TYP.	
N	0.254REF.		0.010REF.	
P	0.900	1.000	0.035	0.039
θ	8°	12°	8°	12°


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