

■ PRODUCT CHARACTERISTICS

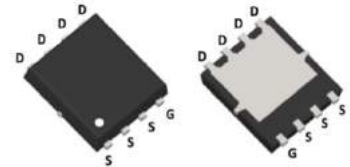
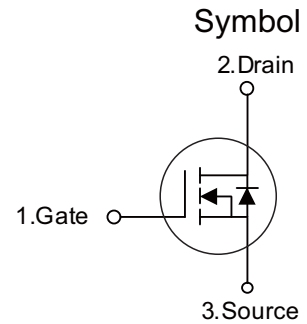
V _{DSS}	60V
R _{DS(ON)} -Typ (atV _{GS} =10V)	16mΩ
R _{DS(ON)} -Typ (atV _{GS} =4.5V)	21 mΩ
I _D	35A

■ APPLICATIONS

- Load Switch
- PWM Application
- Power Management

■ FEATURES

- Advanced Trench Technology
- Excellent R_{DS(ON)} and Low Gate Charge
- Lead Free



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT6522J	PDFN3X3-8L	5000 pieces /Reel

■ ABSOLUTE MAXIMUM RATINGS (T_C =25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DSS}	60	V
Gate -Source Voltage	V _{GSS}	±20	V
Continuous Drain Current	I _D	T _C =25°C	35
		T _C =100°C	22.8
Pulsed Drain Current	I _{DM}	140	A
Single Pulsed Avalanche Energy	E _{AS}	165	mJ
Power Dissipation	P _D	42	W
Thermal Resistance,Junction to Case	R _{θJC}	3	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to+ 150	°C

■ ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	BV_{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-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	-	2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$	-	16	22	m Ω
		$V_{GS}=4.5V, I_D=20A$	-	21	26	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=10V, I_D=5A$	10	-	-	S
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $F=1.0MHz$	-	678	-	PF
Output Capacitance	C_{oss}		-	380	-	PF
Reverse Transfer Capacitance	C_{rss}		-	14	-	PF
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=30V, I_D=30A,$ $V_{GS}=10V, R_G=1.8\Omega$	-	11	-	nS
Turn-on Rise Time	t_r		-	79	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	33	-	nS
Turn-Off Fall Time	t_f		-	107	-	nS
Total Gate Charge	Q_g	$V_{DS}=30V, I_D=30A,$ $V_{GS}=10V$	-	45	-	nC
Gate-Source Charge	Q_{gs}		-	8	-	nC
Gate-Drain Charge	Q_{gd}		-	11	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=10A$	-	-	1.2	V
Diode Forward Current	I_S		-	-	35	A
Reverse Recovery Time	t_{rr}	$T_J = 25^\circ\text{C}, I_F = 30A$ $di/dt = 100A/\mu s$	-	14	-	nS
Reverse Recovery Charge	Q_{rr}		-	10	-	nC

■ TYPICAL CHARACTERISTICS

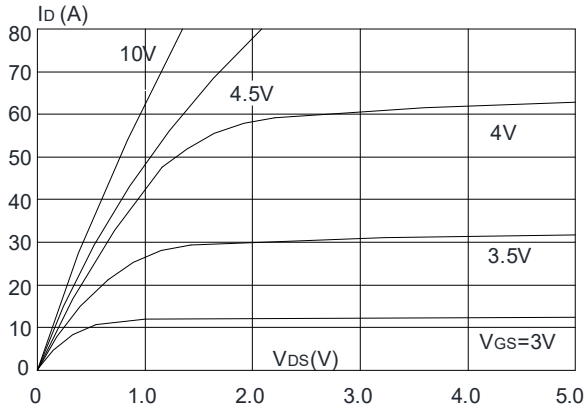


Figure 1: Output Characteristics

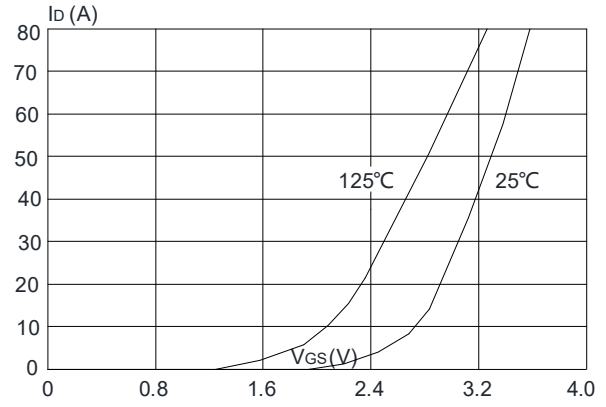


Figure 2: Typical Transfer Characteristics

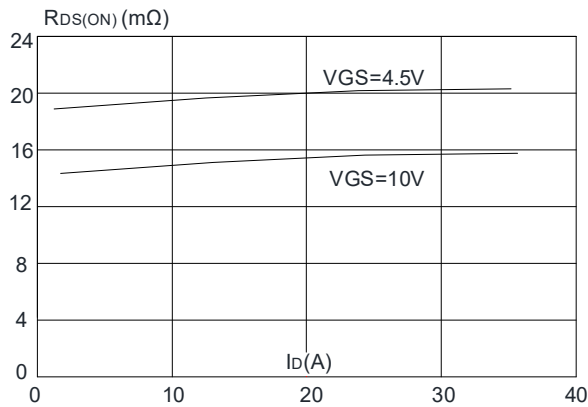


Figure 3: On-resistance vs. Drain Current

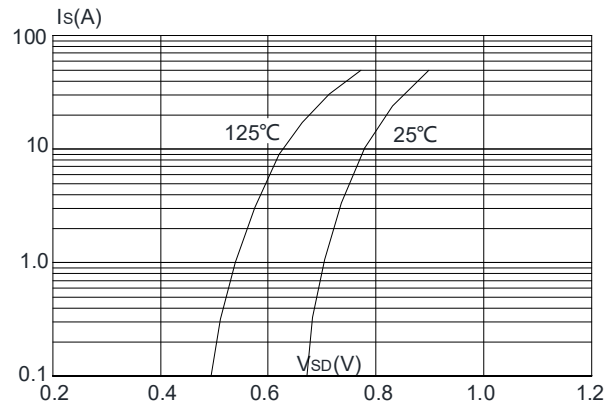


Figure 4: Body Diode Characteristics

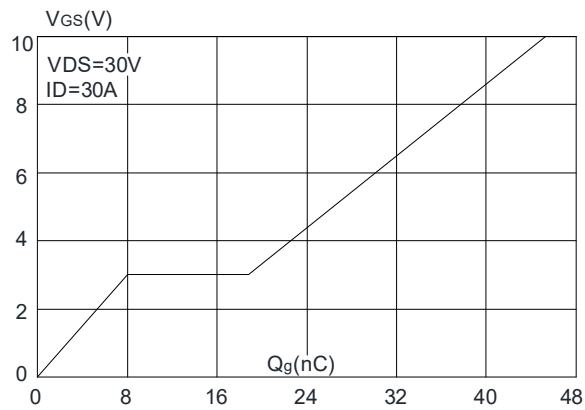


Figure 5: Gate Charge Characteristics

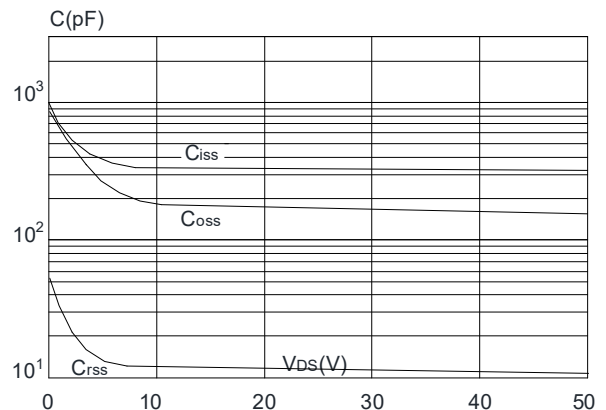


Figure 6: Capacitance Characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

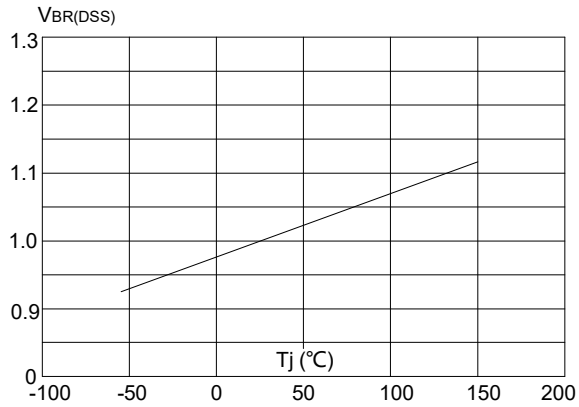


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

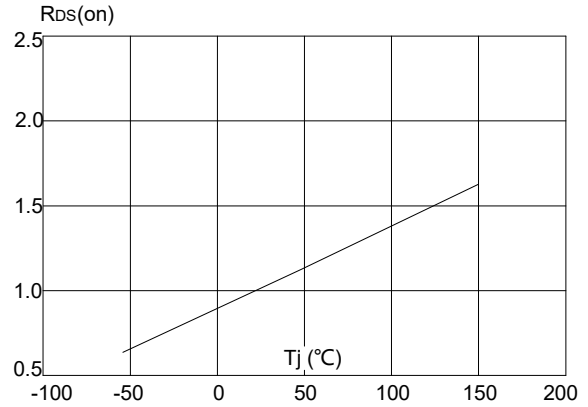


Figure 8: Normalized on Resistance vs. Junction Temperature

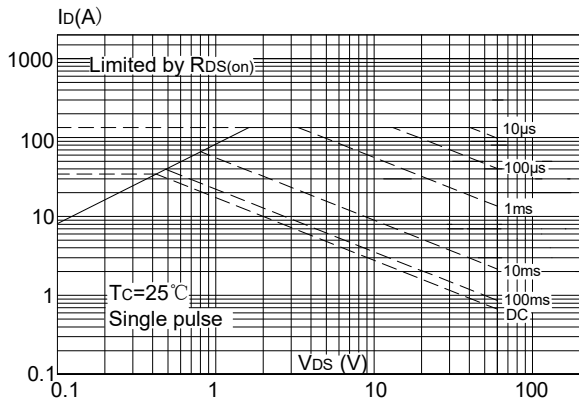


Figure 9: Maximum Safe Operating Area

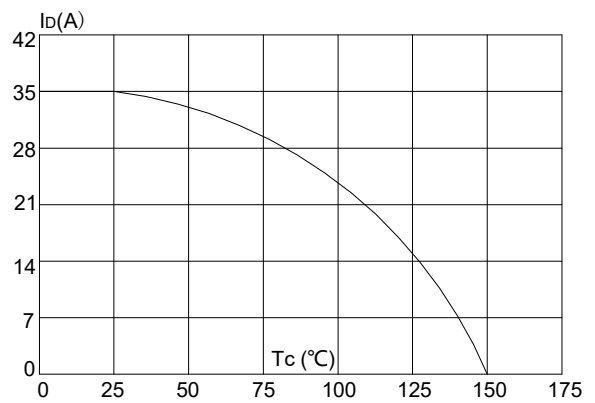
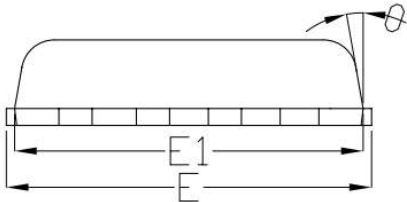
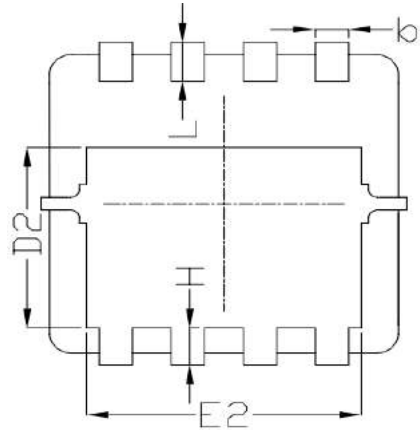
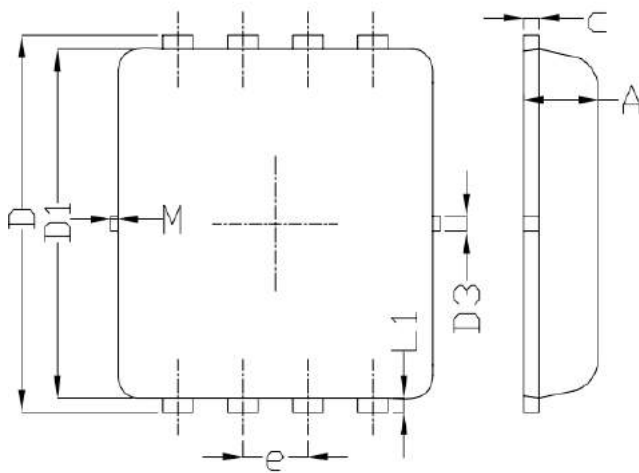
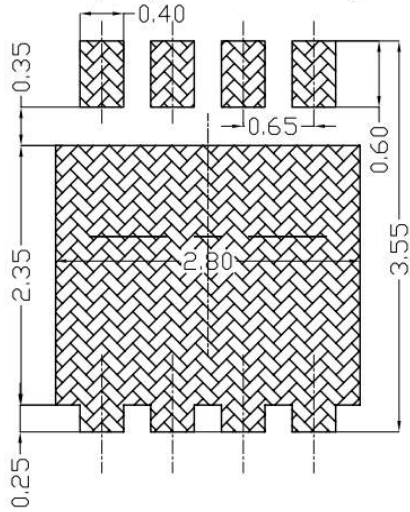


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

■ PDFN3X3-8L Package Mechanical Data



Land Pattern
(Only for Reference)



SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
A	0.70	0.75	0.80
b	0.25	0.30	0.35
c	0.10	0.15	0.25
D	3.25	3.35	3.45
D1	3.00	3.10	3.20
D2	1.78	1.88	1.98
D3	---	0.13	---
E	3.20	3.30	3.40
E1	3.00	3.15	3.20
E2	2.39	2.49	2.59
e	0.65BSC		
H	0.30	0.39	0.50
L	0.30	0.40	0.50
L1	---	0.13	---
θ	---	10°	12°
M	*	*	0.15
* Not specified			

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