

■ PRODUCT CHARACTERISTICS

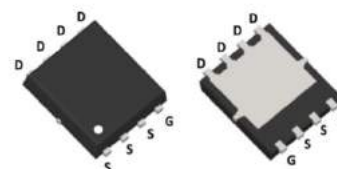
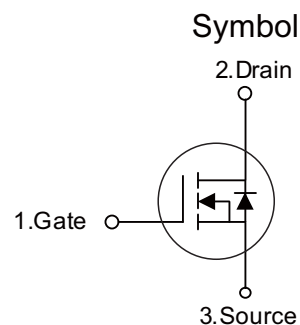
V_{DS}	60V
$R_{DS(ON)-Typ}$ (at $V_{GS}=10V$)	16m Ω
$R_{DS(ON)-Typ}$ (at $V_{GS}=4.5V$)	21 m Ω
ID	35A

■ 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 ($T_C=25^{\circ}C$, unless otherwise specified)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate -Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C=25^{\circ}C$	I_D	35	A
	$T_C=100^{\circ}C$	I_D	22.8	A
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		$R_{\theta JC}$	3	$^{\circ}C/W$
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	$^{\circ}C$

■ 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 =250μA	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} =±20V, V _{DS} =0V	-	-	±100	nA
On characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	-	2.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =20A	-	16	22	mΩ
		V _{GS} =4.5V, I _D =20A	-	21	26	mΩ
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 =1.8Ω	-	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°C, I _F = 30A di/dt = 100A/μs	-	14	-	nS
Reverse Recovery Charge	Q _{rr}		-	10	-	nC

■ TYPICAL CHARACTERISTICS

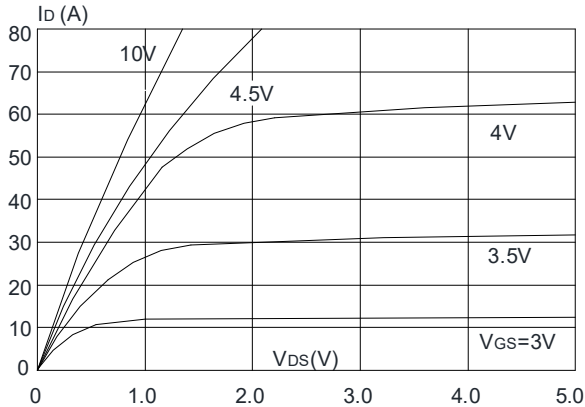


Figure 1: Output Characteristics

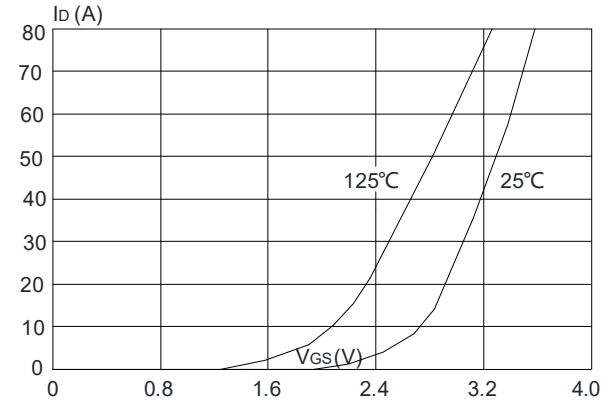


Figure 2: Typical Transfer Characteristics

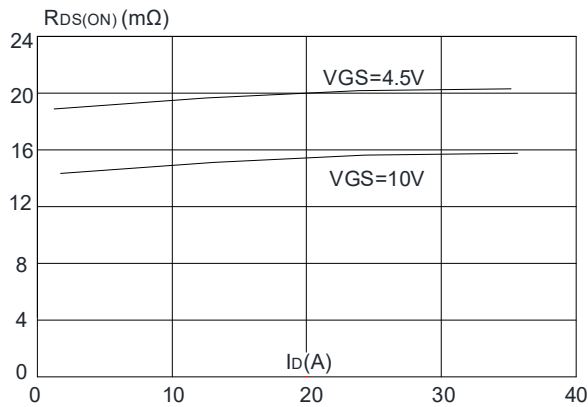


Figure 3: On-resistance vs. Drain Current

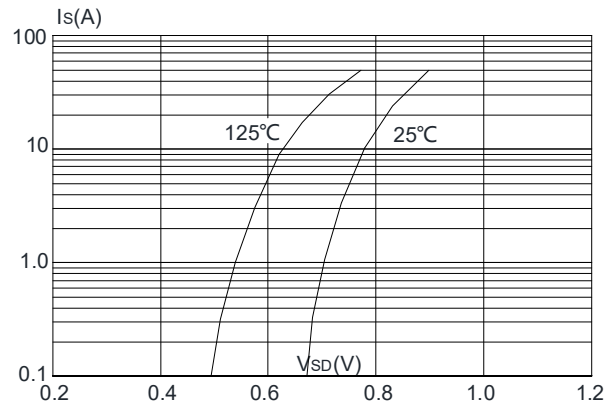


Figure 4: Body Diode Characteristics

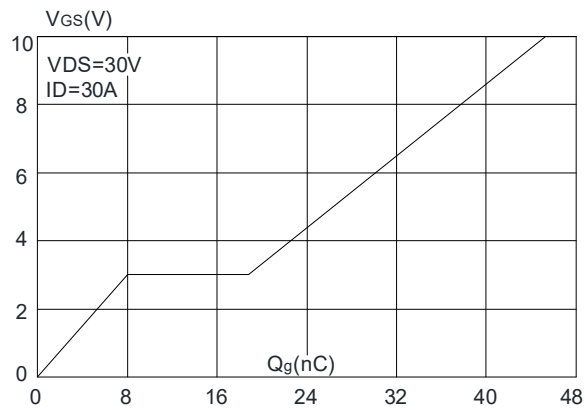


Figure 5: Gate Charge Characteristics

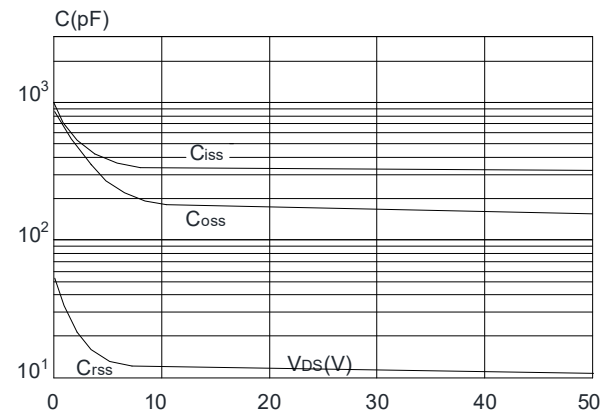


Figure 6: Capacitance Characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

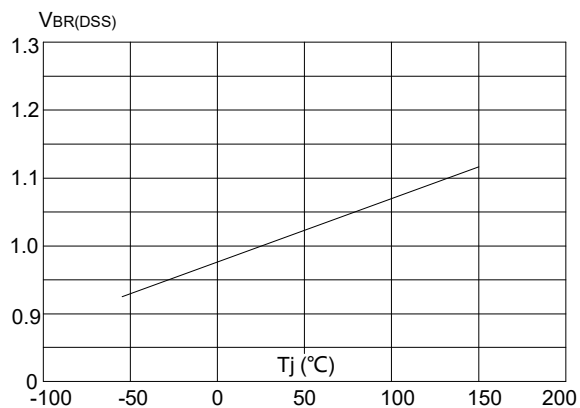


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

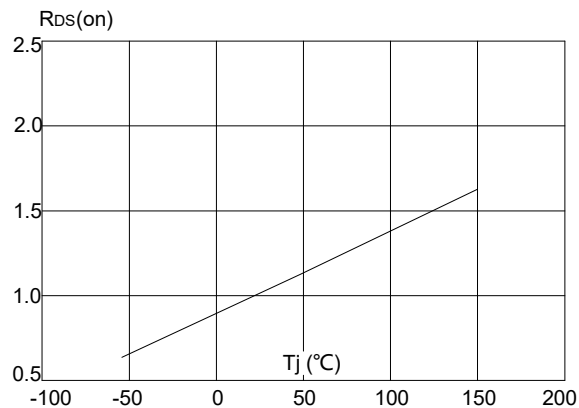


Figure 8: Normalized on Resistance vs. Junction Temperature

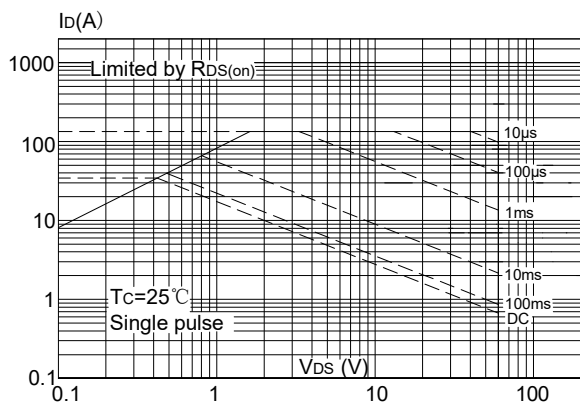


Figure 9: Maximum Safe Operating Area

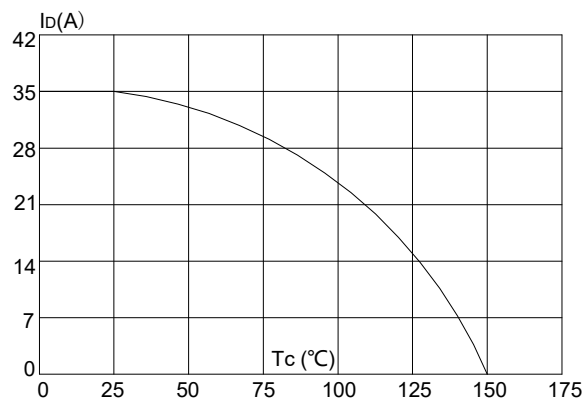
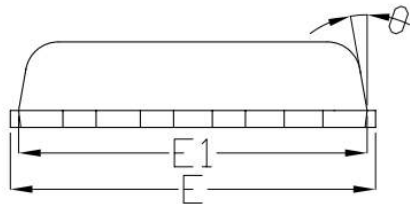
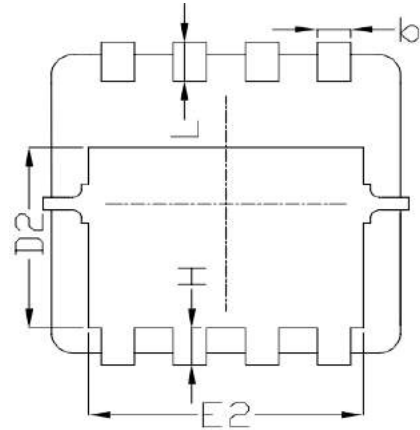
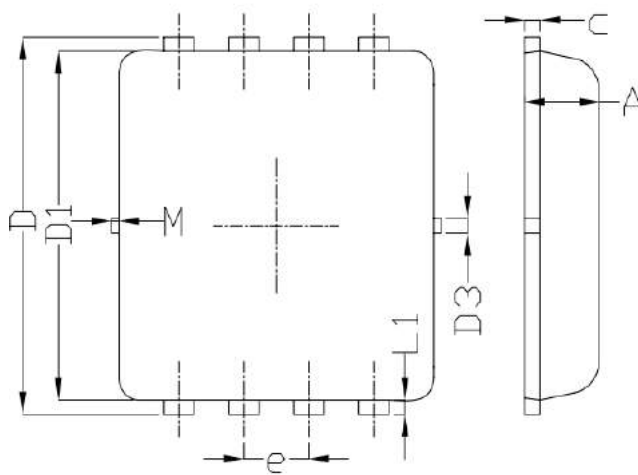
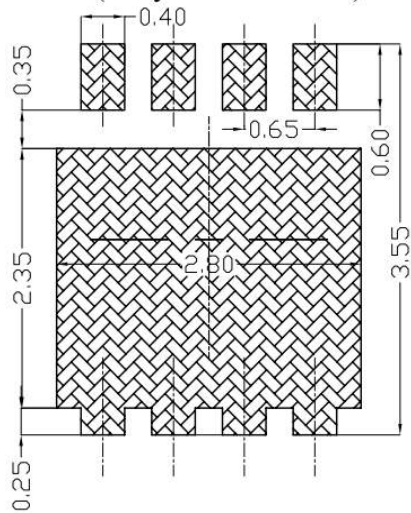


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

■ 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			