

■ PRODUCT CHARACTERISTICS

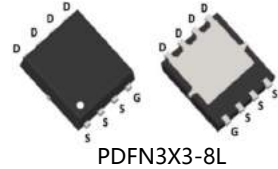
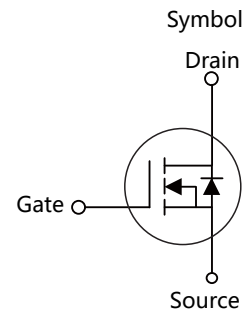
V _{DSS}	30V
R _{DS(on)} Typ@V _{GS} =10V	4.5mΩ
R _{DS(on)} Typ@V _{GS} =4.5V	8mΩ
I _D	65A

■ APPLICATIONS

- DC/DC converter
- Ideal for high-frequency swihcing and synchronous rectification

■ FEATURES

- Excellent R_{DS(on)} and low gate charge
- Lead free product is acquired



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT3150J	PDFN3X3-8L	5000pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS(T_c = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain -source voltage	V _{DSS}	30	V
Gate -source voltage	V _{GSS}	±20	V
Continuous drain Current	I _D	T _C =25°C	65
		T _C =100°C	45
Pulsed drain Current	I _{DM}	200	A
Single pulsed avalanche energy	E _{AS}	150	mJ
Power dissipation	P _D	65	W
Operating and storage temperature range	T _J , T _{STG}	55 to +150	°C

■ THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Thermal Resistance- Junction to Case	R _{θJC}	1.92	°C/W

■ ELECTRICAL CHARACTERISTICS (Tc=25°C, unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS} = 0V, I_{DS} = 250\mu A$	30	-	-	V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$	-	-	1	μA
Gate to 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	-	2.5	V
Stantic drain-source on-state resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$	-	4.5	5	m Ω
		$V_{GS} = 4.5V, I_D = 20A$	-	8	9	m Ω
Forward transconductance	g_{FS}	$V_{DS} = 5V, I_D = 20A$	5	-	-	S
Dynamic characteristics						
Input capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V,$ Frequency = 1MHz	-	1400	-	pF
Output capacitance	C_{oss}		-	205	-	pF
Reverse transfer capacitance	C_{rss}		-	177	-	pF
Total gate charge	Q_g	$V_{DS} = 15V, V_{GS} = 10V,$ $I_D = 20A,$	-	40	-	nC
Gate-source charge	Q_{gs}		-	21	-	nC
Gate-drain charge	Q_{gd}		-	7	-	nC
Switching characteristics						
Turn-on delay Time	$t_{d(on)}$	$V_{DD} = 15V, V_{GS} = 10V,$ $R_G = 6\Omega, I_D = 20A$	-	9	-	nS
Turn-on rise Time	t_r		-	8	-	nS
Turn-off delay Time	$t_{d(off)}$		-	28	-	nS
Turn-off fall Time	t_f		-	5	-	nS
Drain-source diode characteristics						
Diode forward current	I_S		-	-	65	A
Drain forward voltage	V_{SD}	$V_{GS} = 0V, I_D = 20A$	-	-	1.2	V
Body diode reverse recovery time	t_{rr}	$I_F = 20A, di/dt = 100A/\mu s$	-	27	-	nS
Body diode reverse recovery charge	Q_{rr}	$I_F = 20A, di/dt = 100A/\mu s$	-	20	-	nS

■ TYPICAL CHARACTERISTICS

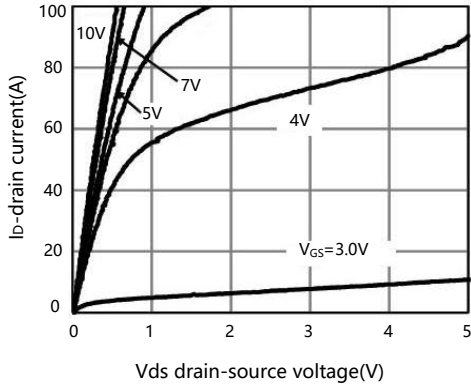


Figure 1 output characteristics

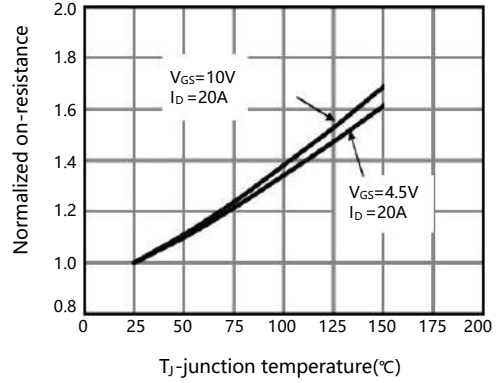


Figure 2 R_{Dson} -junction temperature

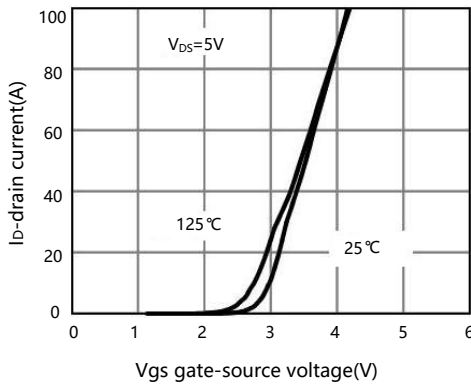


Figure 3 transfer characteristics

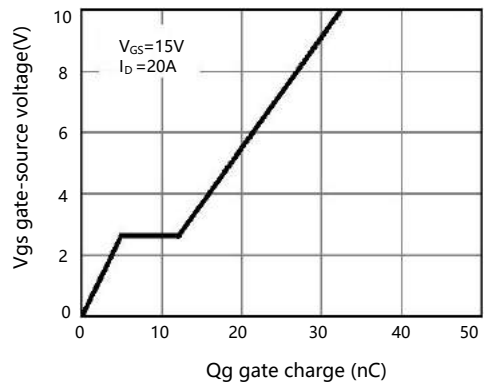


Figure 4 gate charge

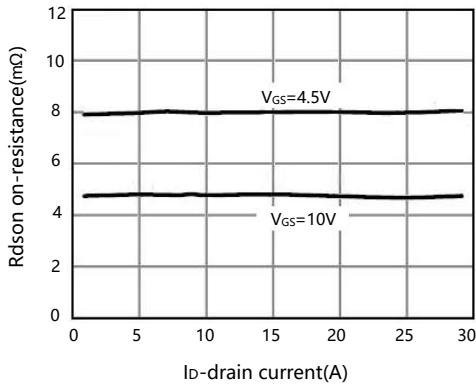


Figure 5 r_{Dson} -drain current

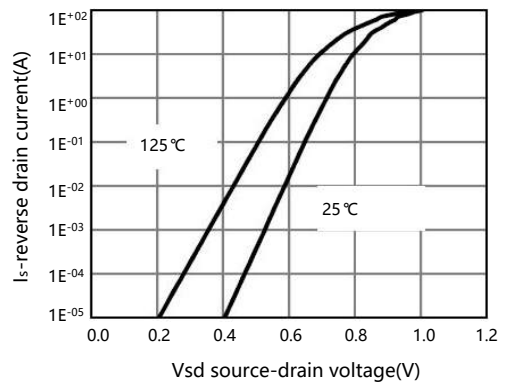


Figure 6 source-drain diode forward

■ TYPICAL CHARACTERISTICS(Cont.)

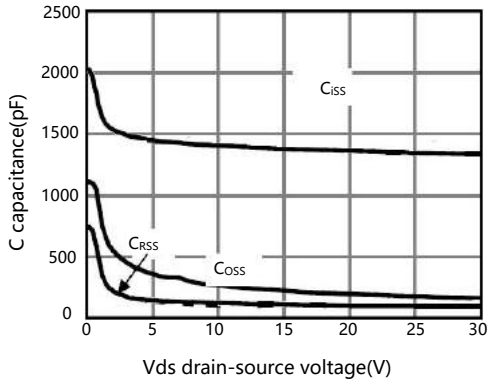


Figure 7 capacitance vs Vds

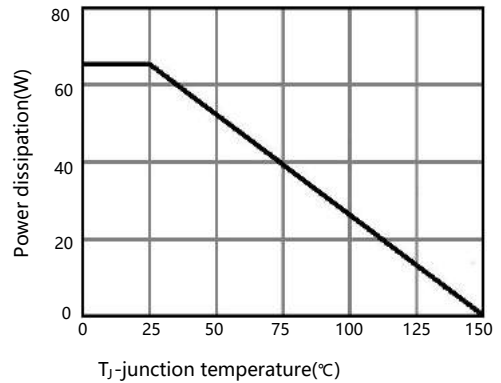


Figure 8 power de-rating

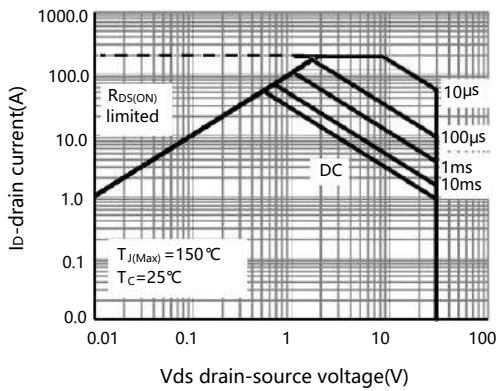


Figure 9 safe operation area

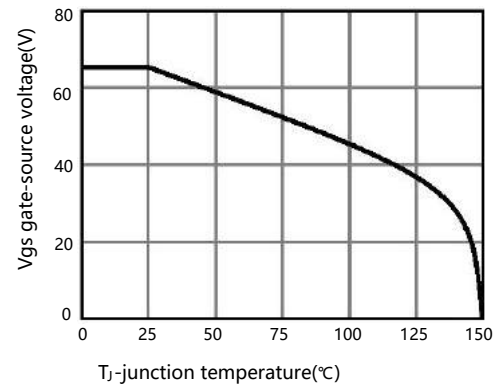


Figure 10 id current-junction temperature

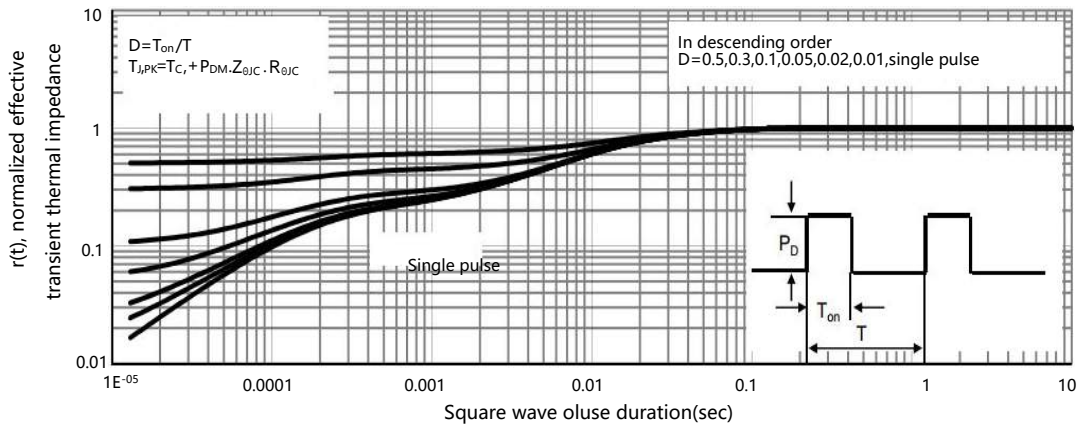
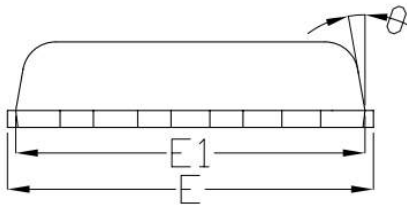
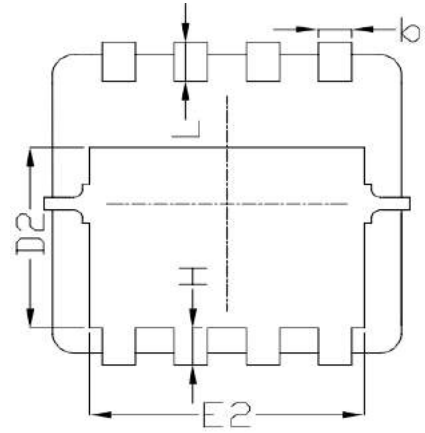
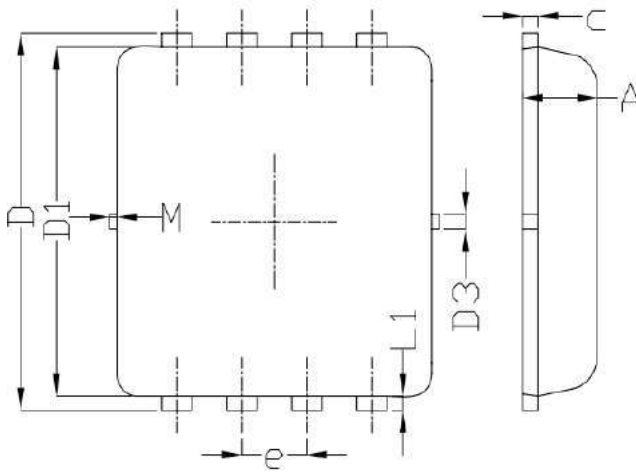
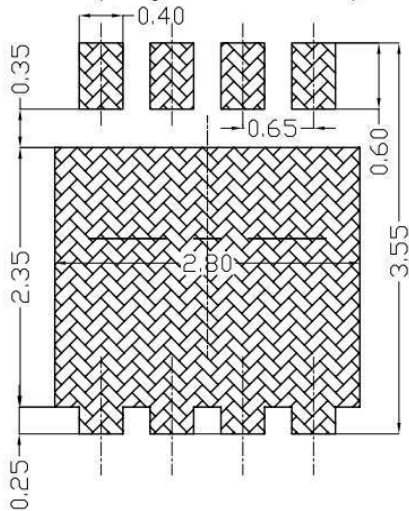


Figure 11 Normalized maximum transient thermal impedance

■ 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			