

■ PRODUCT CHARACTERISTICS

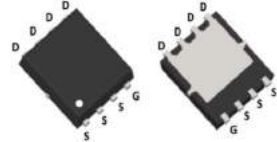
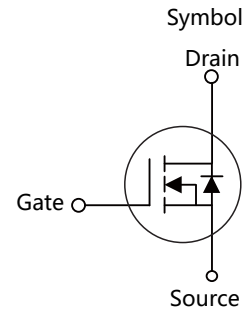
V <sub>DSS</sub>	30V
R <sub>DS(on)</sub> Typ@V <sub>GS</sub> =10V	4.5mΩ
R <sub>DS(on)</sub> Typ@V <sub>GS</sub> =4.5V	8mΩ
I <sub>D</sub>	65A

■ APPLICATIONS

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

■ FEATURES

- Excellent R<sub>DS(on)</sub> and low gate charge
- Lead free product is acquired



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT3150G	PDFN5X6	5000pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS(T<sub>c</sub> = 25°C unless otherwise noted)

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

■ THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Thermal Resistance- Junction to Case	R <sub>θJC</sub>	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	$\mu A$
Gate to body leakage current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	$\pm 100$	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 $\Omega$
		$V_{GS} = 4.5V, I_D = 20A$	-	8	9	m $\Omega$
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

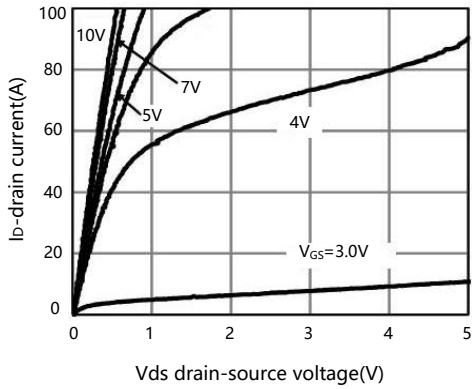


Figure 1 output characteristics

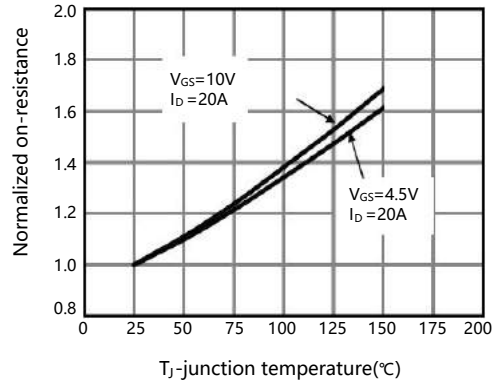


Figure 2  $R_{DS(on)}$ -junction temperature

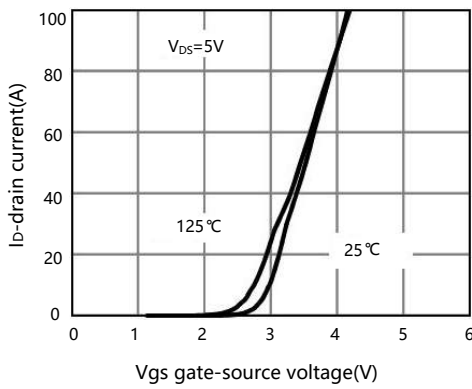


Figure 3 transfer characteristics

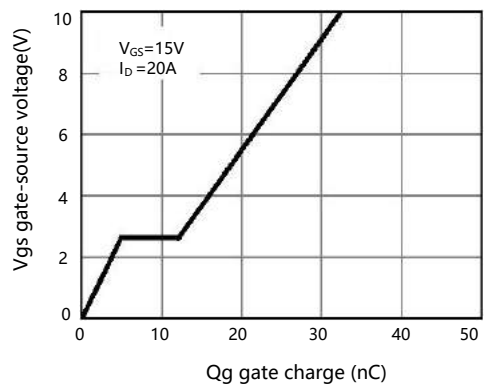


Figure 4 gate charge

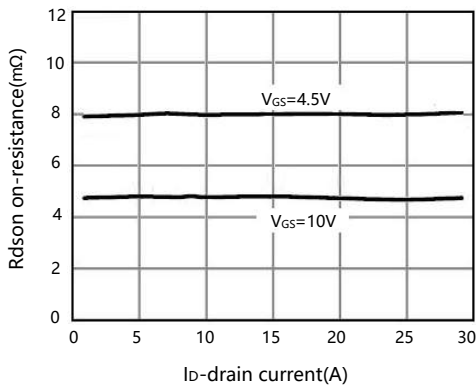


Figure 5  $r_{DS(on)}$ -drain current

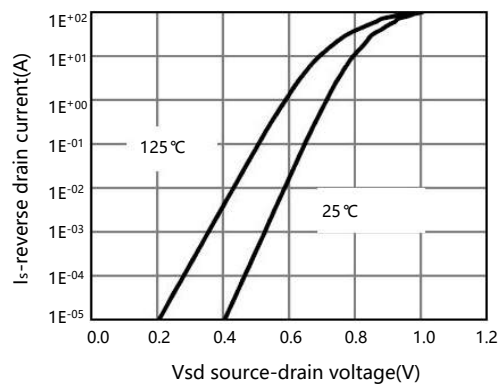


Figure 6 source-drain diode forward

■ TYPICAL CHARACTERISTICS(Cont.)

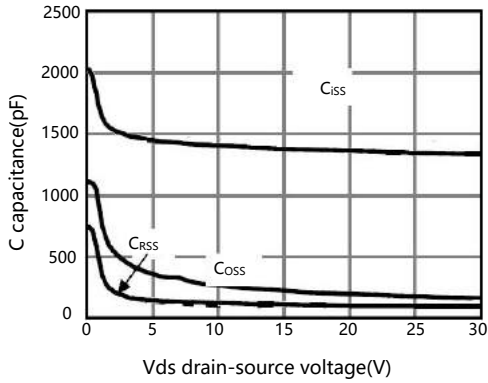


Figure 7 capacitance vs Vds

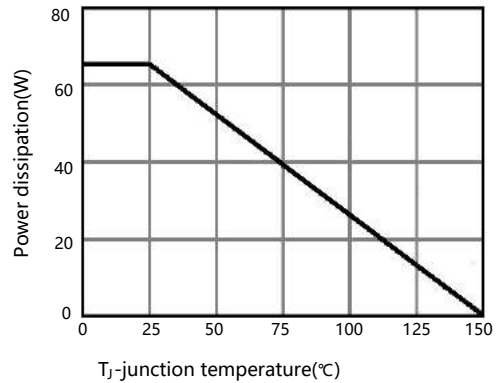


Figure 8 power de-rating

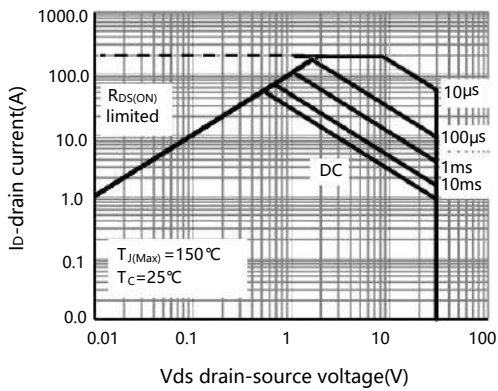


Figure 9 safe operation area

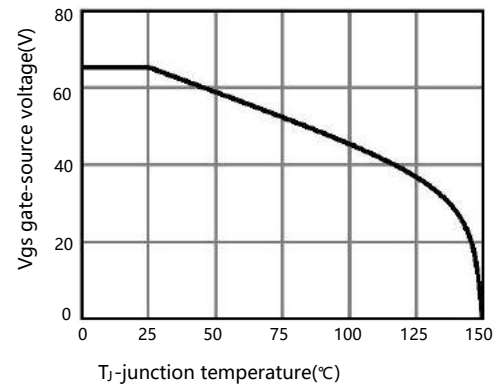


Figure 10 id current-junction temperature

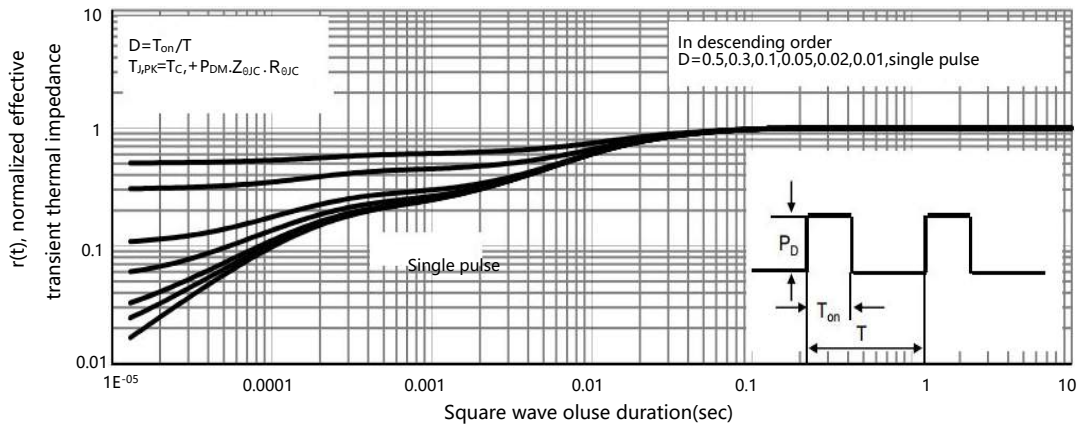
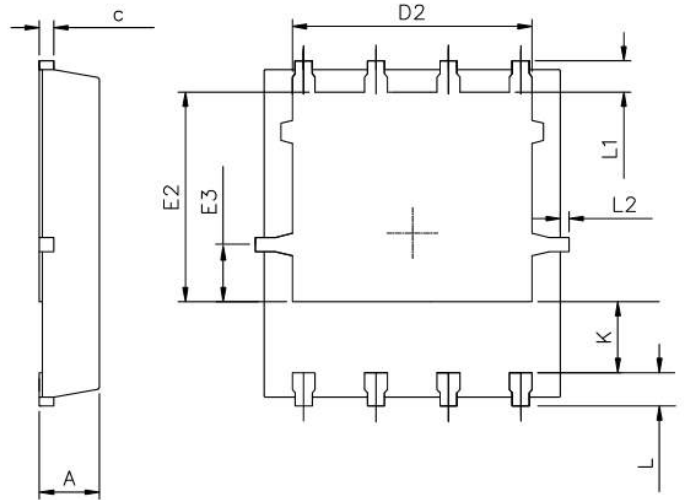
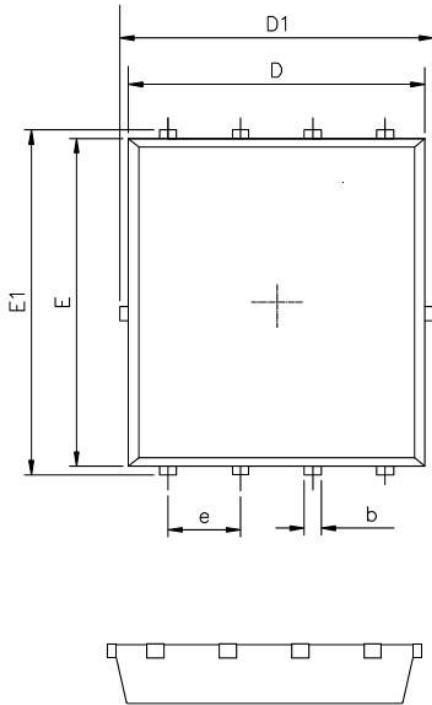
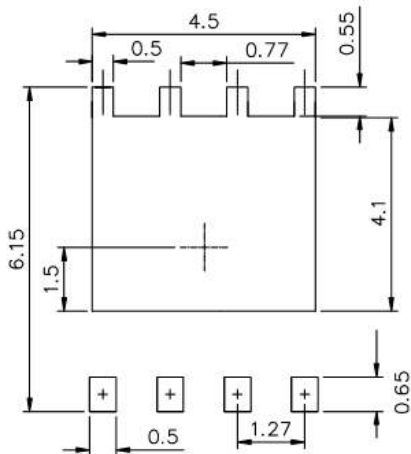


Figure 11 Normalized maximum transient thermal impedance

■ PDFN5X6-8L Package mechanical data



RECOMMENDED LAND PATTERN



UNIT:mm

	MIN	NOM	MAX
A	0.90	1.00	1.10
b	0.25	0.35	0.50
c	0.10	0.20	0.30
D	4.80	5.00	5.30
D1	4.90	5.10	5.50
D2	3.92	4.02	4.20
E	5.65	5.75	5.85
E1	5.90	6.05	6.20
E2	3.325	3.525	3.775
E3	0.80	0.90	1.00
e		1.27	
L	0.40	0.55	0.70
L1		0.65	
L2	0.00		0.15
K	1.00	1.30	1.50