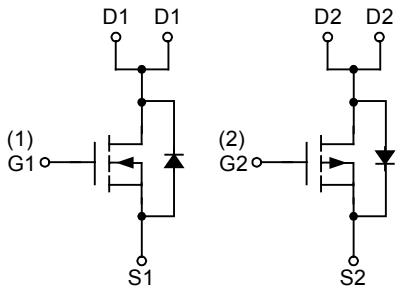
■ PRODUCT CHARACTERISTICS

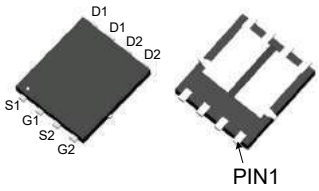
N-CHANNEL MOSFET		P-CHANNEL MOSFET	
V_{DSS}	30V	V_{DSS}	-30V
$R_{DS(ON)}$ Typ(@V_{GS}=10V)	10mΩ	$R_{DS(ON)}$ Typ(@V_{GS}=-10V)	14mΩ
$R_{DS(ON)}$ Typ(@V_{GS}=4.5V)	15mΩ	$R_{DS(ON)}$ Typ(@V_{GS}=-4.5V)	18mΩ
I_D	30A	I_D	-20A

Symbol



■ APPLICATIONS

* Electronic lamp ballasts based on half bridge
* Load Switching,Quick/Wirelss Charge.
* Motor Driving



■ FEATURE

* Low Gate Charge
* Pb-Free Lead Plating

■ ORDER INFORMATION

Order Codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT3617G	PDFN5x6	5000 pieces/Reel

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

Parameter	Symbol	N-channel	P-channel	Unit
Drain-Source Voltage	V_{DSS}	30	-30	V
Gate-Source Voltage	V_{GSS}	±20	±20	V
Drain Current Continuous(@V_{GS}=±10V ,T_A=25°C)	I_D	30	-20	A
Drain Current Pulsed	I_{DM}	120	-80	A
Avalanche Energy	E_{AS}	81	110	mJ
Junction to Case	R_{thJC}	5	8.3	°C/W
Power Dissipation	P_D	25	15	W
Junction Temperature	T_J	+150		°C
Storage Temperature	T_{STG}	-55~ +150		°C

■ N-MOS ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain to Source Breakdown Voltage	V_{DSS}	V_{GS}=0V,I_D=250μA	30	-	-	V
Drain to Source Leakage Current	I_{DSS}	V_{DS}=30V,V_{GS}=0V	-	-	1	μA
Gate to Source Forward Leakage	$I_{GSS(F)}$	V_{GS}=+20V,V_{DS}=0V	-	-	100	nA
Gate to Source Reverse Leakage	$I_{GSS(R)}$	V_{GS}=-20V ,V_{DS}=0V	-	-	-100	nA
On characteristics						
Drain to Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V,I_D=15A	-	10	15	mΩ
		V_{GS}=4.5V,I_D=15A	-	15	19	mΩ
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS},I_D=250μA	1	1.8	2.5	V
Dynamic characteristics						
Gate Resistance	R_g	V_{GS}=0V,V_{DS}=0V ,f=1.0MHz	-	1.5	-	Ω
Forward Transconductance	g_{fs}	V_{DS}=10V,I_D=3A	-	5	-	S
Input Capacitance	C_{iss}	V_{DS}=20V,V_{GS}=0V f=1.0MHz	-	821	-	pF
Output Capacitance	C_{oss}		-	119	-	pF
Reverse Transfer Capacitance	C_{rss}		-	79	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	$t_{d(ON)}$	V_{GS}=10V, V_{DS}=15V, I_D=15 A,R_G=3Ω	-	6.7	-	ns
Rise Time	t_r		-	15	-	ns
Turn-off Delay Time	$t_{d(OFF)}$		-	25	-	ns
Fall Time	t_f		-	5.6	-	ns
Total Gate Charge	Q_g	I_D=15 A, V_{DS}=15V V_{GS}=10V	-	23	-	nC
Gate to Source Charge	Q_{gs}		-	4.5	-	nC
Gate to Drain("Miller") Charge	Q_{gd}		-	5.5	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I_S		-	-	30	A
Maximum Pulsed Current(Body Diode)	I_{SM}		-	-	120	A
Diode Forward Voltage	V_{SD}	I_{SD}=1A, V_{GS}=0V	-	0.73	1.2	V
Reverse Recovery Time	t_{rr}	I_{SD}=15 A, T_J=25°C dI/dt=100A/μs	-	12	-	ns
Reverse Recovery Charge	Q_{rr}		-	6	-	nC

■P-MOS ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain to Source Breakdown Voltage	V_{DSS}	V_{GS}=0V,I_D=-250μA	-30	-	-	V
Drain to Source Leakage Current	I_{DSS}	V_{DS}=-30V,V_{GS}=0V	-	-	-1	μA
Gate to Source Forward Leakage	$I_{GSS(F)}$	V_{GS}=+20V,V_{DS}=0V	-	-	100	nA
Gate to Source Reverse Leakage	$I_{GSS(R)}$	V_{GS}=-20V ,V_{DS}=0V	-	-	-100	nA
On characteristics						
Drain to Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V,I_D=-10A	-	14	20	mΩ
		V_{GS}=-4.5V,I_D=-10A	-	18	25	mΩ
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS},I_D=-250μA	-1	-1.6	-2.5	V
Dynamic characteristics						
Gate Resistance	R_g	V_{GS}=0V,V_{DS}=0V ,f=1.0MHz	-	11	-	Ω
Forward Transconductance	g_{fs}	V_{DS}=-10V,I_D=-3A	-	10	-	S
Input Capacitance	C_{iss}	V_{DS}=-20V,V_{GS}=0V f=1.0MHz	-	1280	-	pF
Output Capacitance	C_{oss}		-	175	-	pF
Reverse Transfer Capacitance	C_{rss}		-	132	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	$t_{d(ON)}$	V_{GS}=-10V,V_{DS}=-15V, I_D=-10A,R_G=3Ω	-	7	-	ns
Rise Time	t_r		-	1.7	-	ns
Turn-off Delay Time	$t_{d(OFF)}$		-	38	-	ns
Fall Time	t_f		-	50	-	ns
Total Gate Charge	Q_g	I_D=-10A, V_{DS}=-15V V_{GS}=-10V	-	25	-	nC
Gate to Source Charge	Q_{gs}		-	5.1	-	nC
Gate to Drain("Miller") Charge	Q_{gd}		-	4.5	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I_S		-	-	-20	A
Maximum Pulsed Current(Body Diode)	I_{SM}		-	-	-80	A
Diode Forward Voltage	V_{SD}	I_{SD}=-1A, V_{GS}=0V	-	-0.73	-1.2	V
Reverse Recovery Time	t_{rr}	I_{SD}=-10A, T_J=25°C dI/dt=100A/μs	-	12	-	ns
Reverse Recovery Charge	Q_{rr}		-	4.8	-	nC

N-MOS TYPICAL CHARACTERISTICS

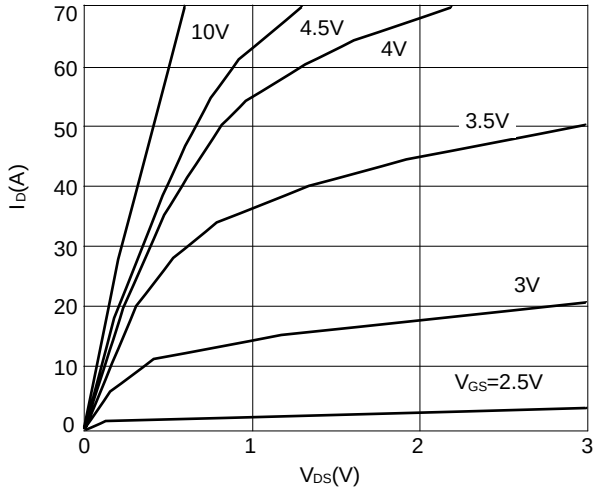


Figure 1: Output Characteristics

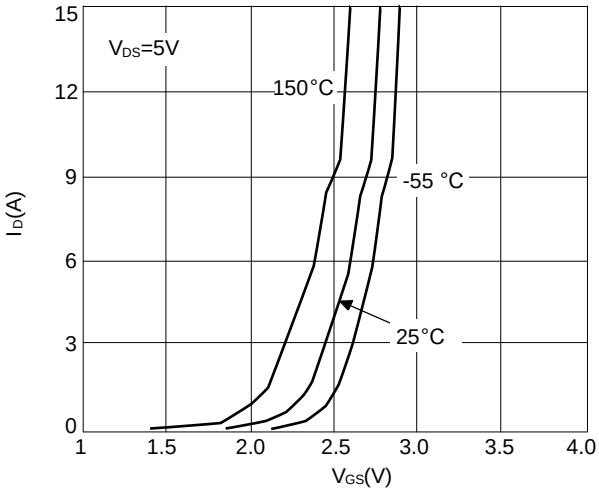


Figure 2: Typical Transfer Characteristics

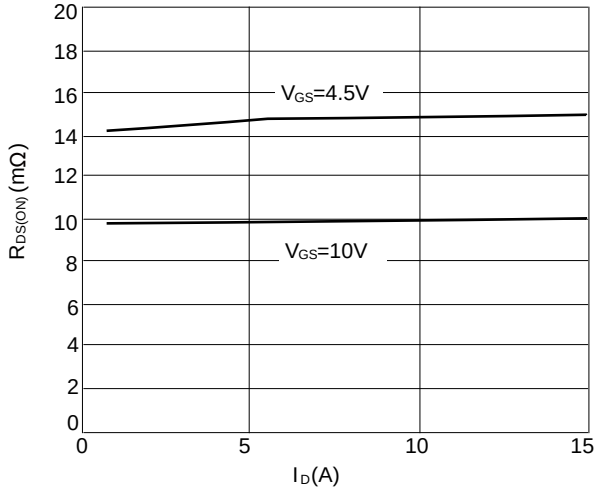


Figure 3: On-Resistance vs. Drain Current

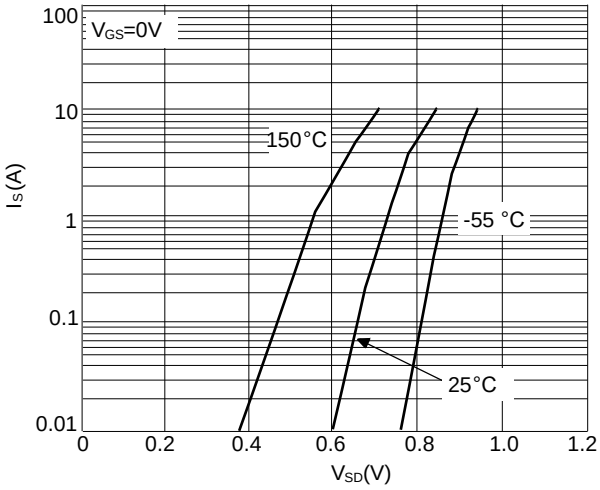


Figure 4: Body Diode Characteristics

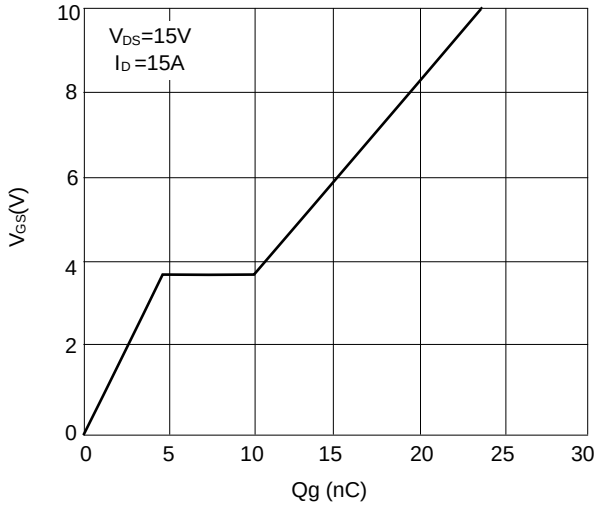


Figure 5: Gate Charge Characteristics

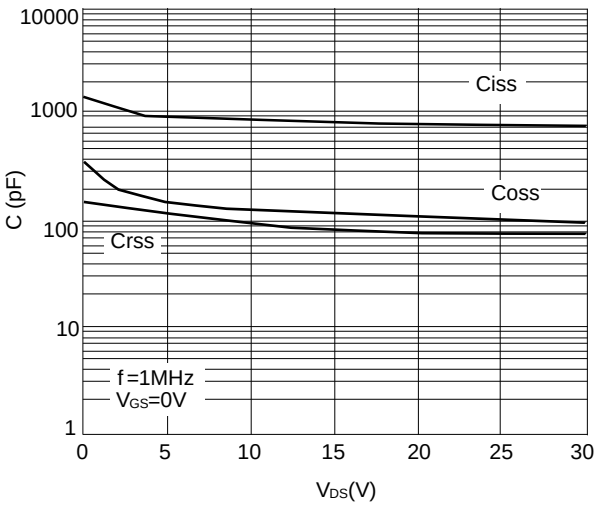


Figure 6: Capacitance Characteristics

■ N-MOS TYPICAL CHARACTERISTICS(Cont.)

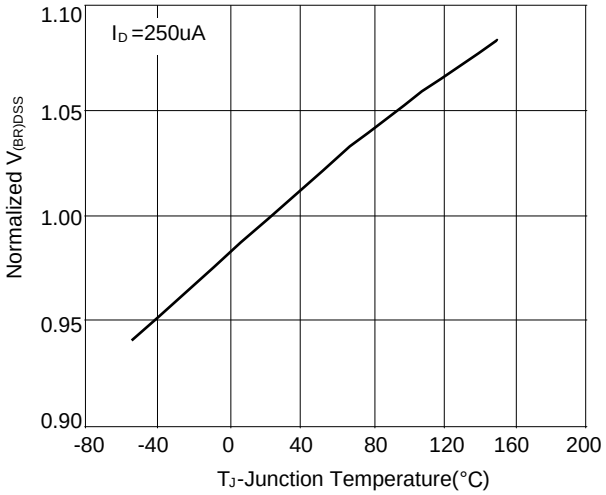


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

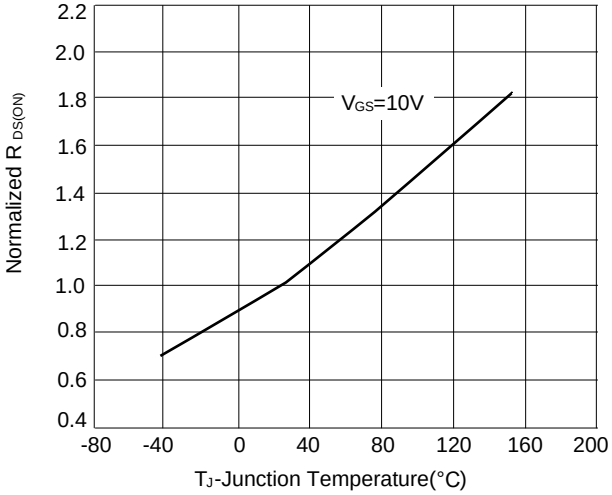


Figure 8: Normalized On-Resistance vs. Junction Temperature

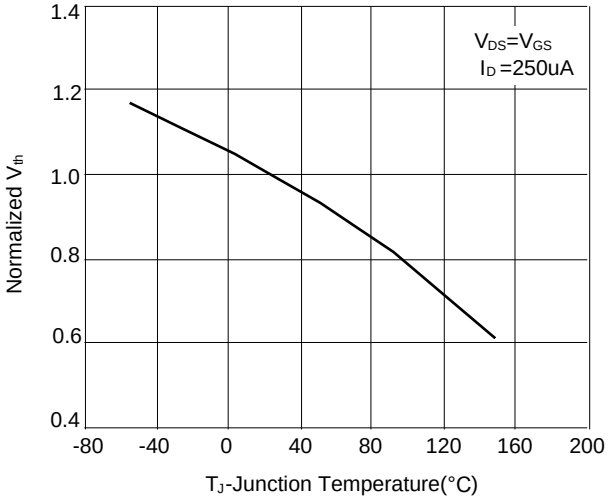


Figure 9: Normalized Threshold Voltage vs. JunctionTemperature

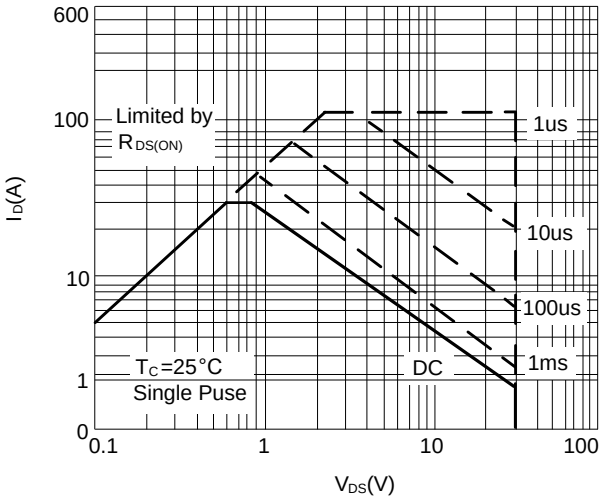


Figure 10: Maximum Safe Operating Area

■ P-MOS TYPICAL CHARACTERISTICS

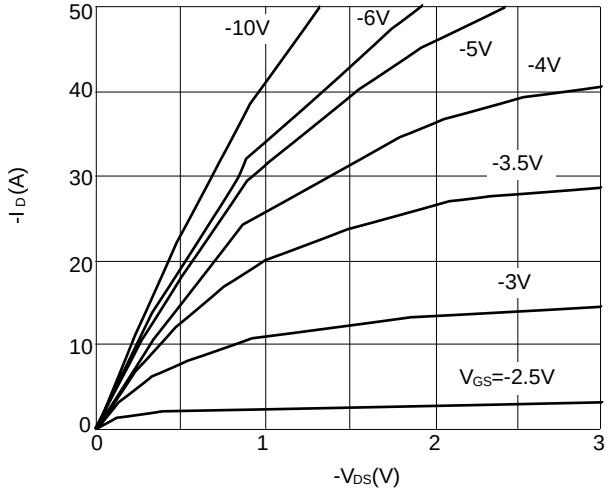


Figure 1: Output Characteristics

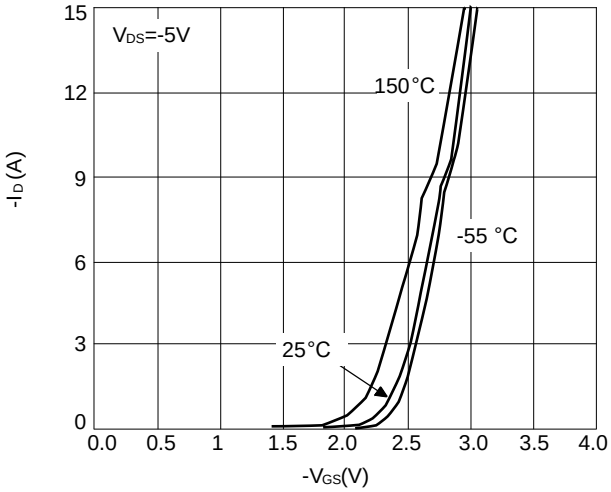


Figure 2: Typical Transfer Characteristics

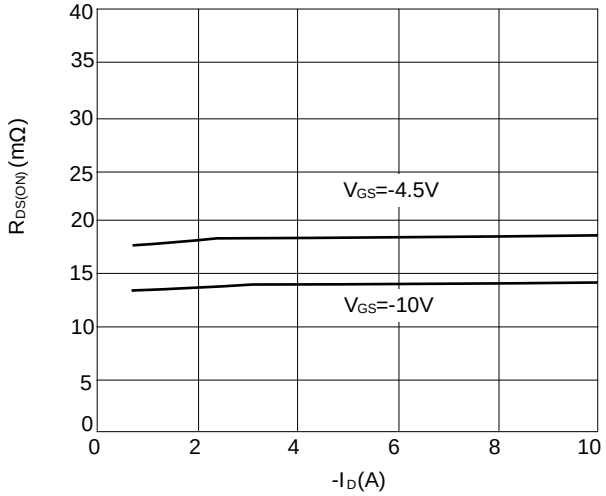


Figure 3: On-Resistance vs. Drain Current

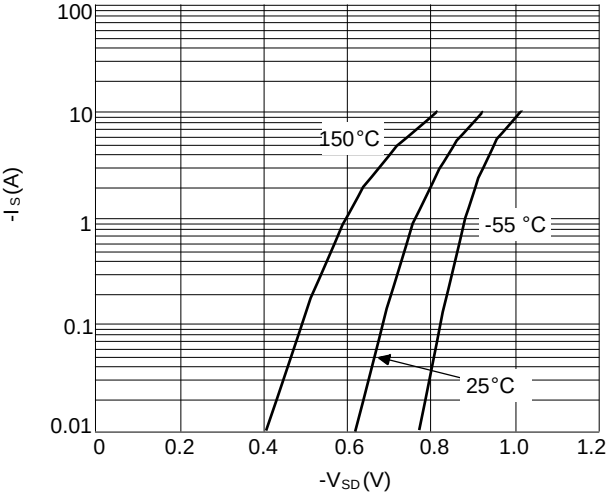


Figure 4: Body Diode Characteristics

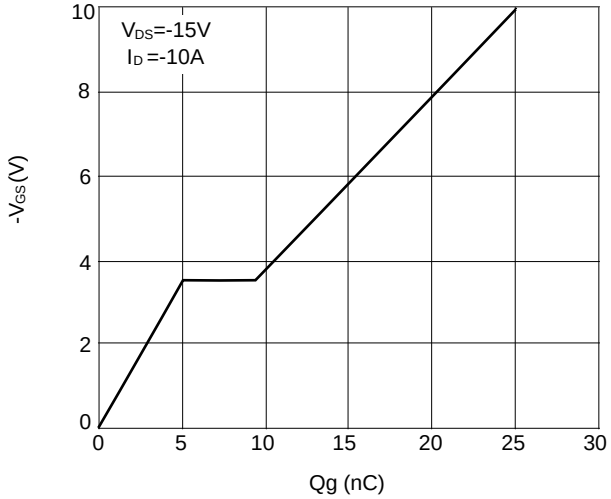


Figure 5: Gate Charge Characteristics

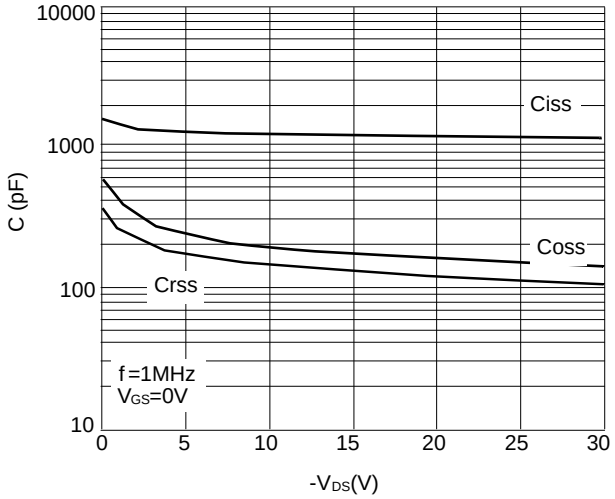


Figure 6: Capacitance Characteristics

■ P-MOS TYPICAL CHARACTERISTICS

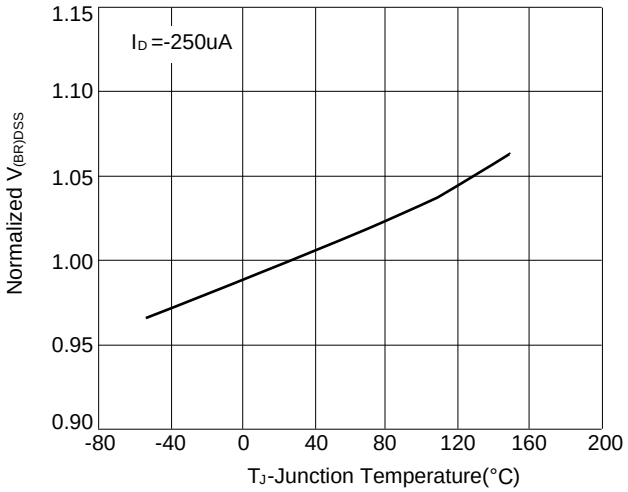


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

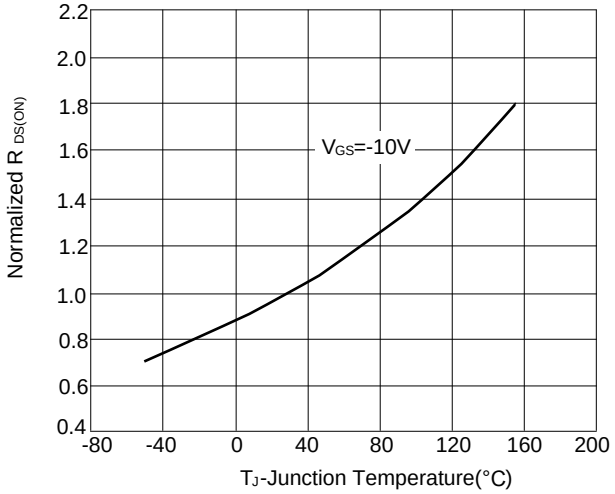


Figure 8: Normalized On-Resistance vs. Junction Temperature

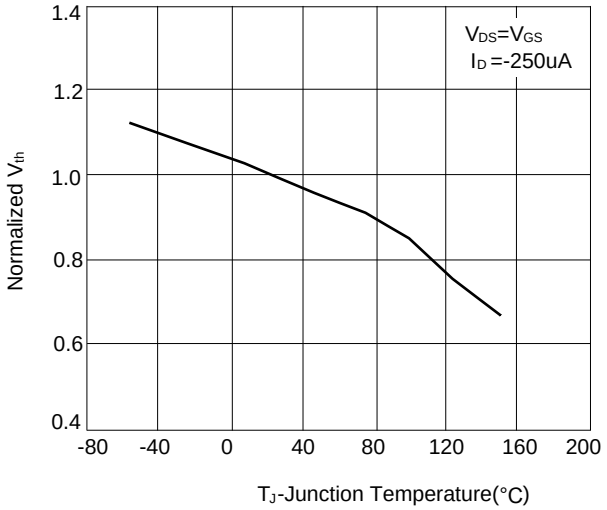


Figure 9: Normalized Threshold Voltage vs. Junction Temperature

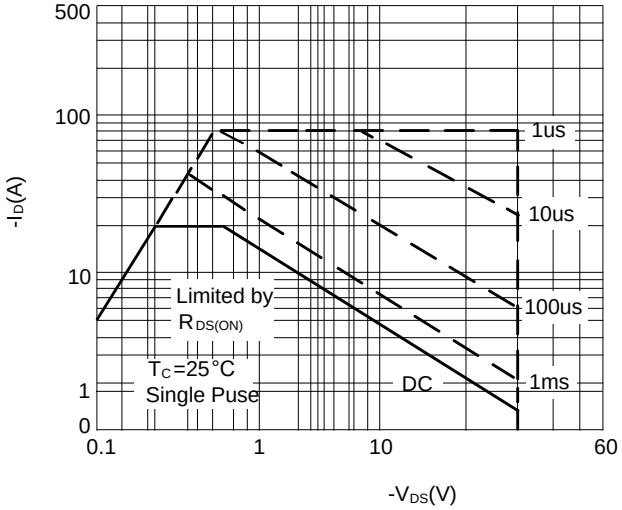
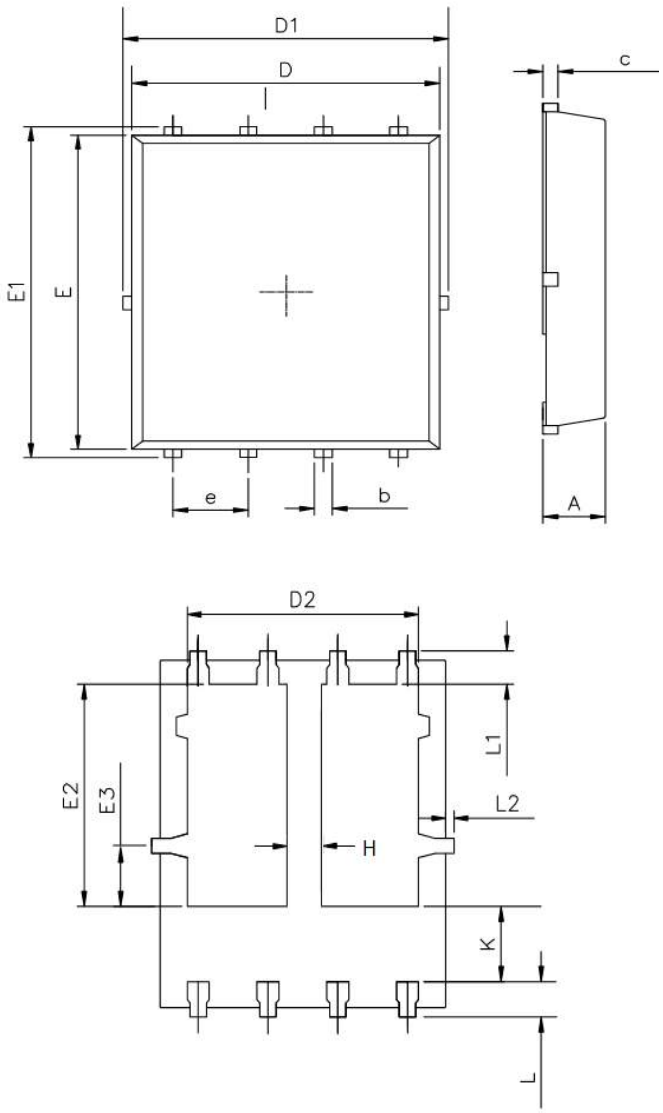


Figure 10: Maximum Safe Operating Area

■ PDFN5X6 Package mechanical data



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
H	0.5	0.6	0.7