

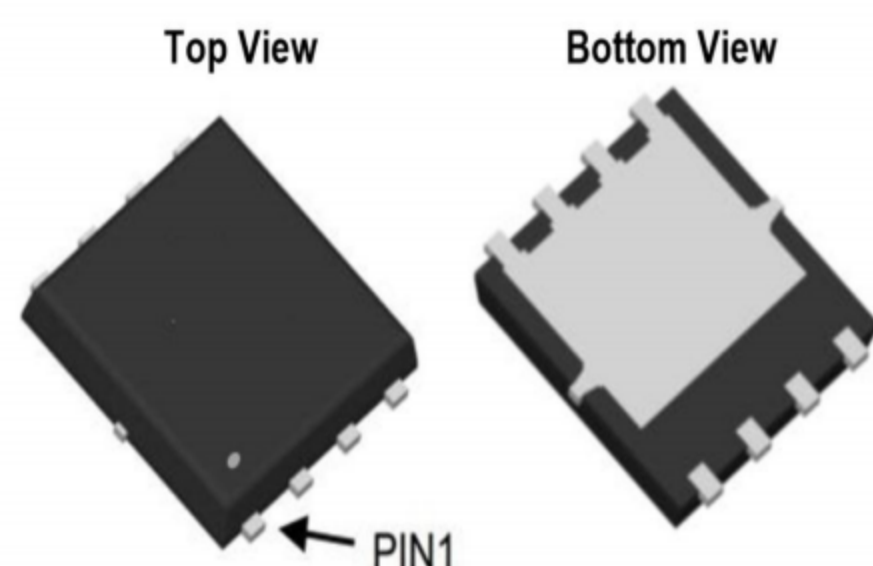
Features

- $V_{DS} = -30V$, $I_D = -100A$
 $R_{DS(ON)} < 4.1m\Omega$ @ $V_{GS} = -10V$
 $R_{DS(ON)} < 6.6m\Omega$ @ $V_{GS} = -4.5V$
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- Lead Free

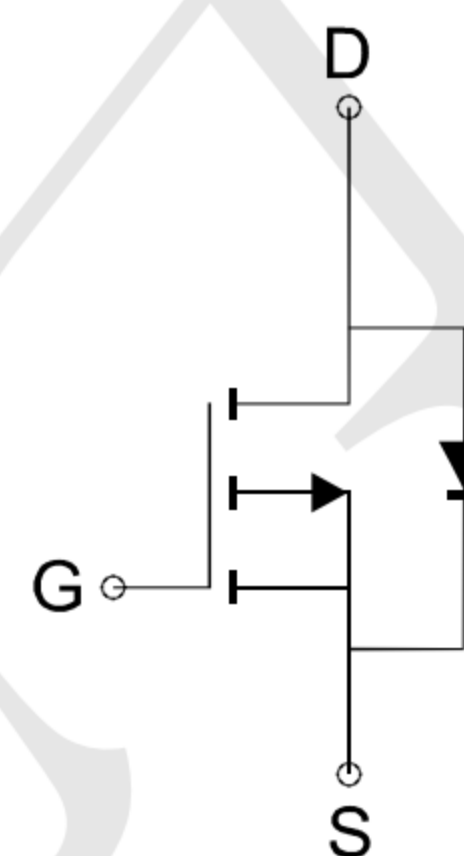
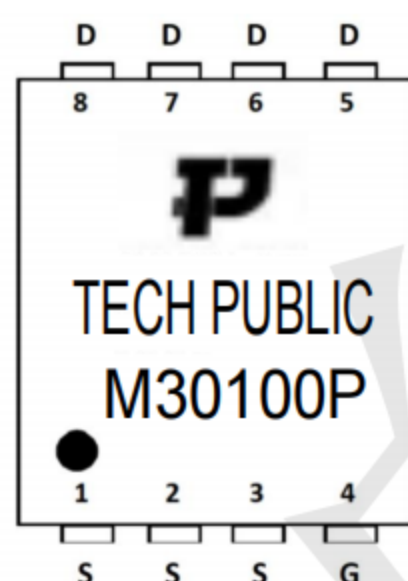
Application

- PWM Applications
- Load Switch
- Power Management

PDFN5x6-8L



Marking:



P-Channel MOSFET

Absolute Maximum Ratings ($T_C = 25^\circ C$ unless otherwise noted)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain-Source Voltage		-30	V
V_{GSS}	Gate-Source Voltage		± 20	V
I_D	Continuous Drain Current	$T_C = 25^\circ C$	-100	A
		$T_C = 100^\circ C$	-52	A
I_{DM}	Pulsed Drain Current ^{note1}		-320	A
E_{AS}	Single Pulsed Avalanche Energy ^{note2}		342	mJ
P_D	Power Dissipation	$T_C = 25^\circ C$	57	W
$R_{\theta JC}$	Thermal Resistance, Junction to Case		2.2	$^\circ C/W$
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	$^\circ C$

Electrical Characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = -250μA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -30V, V _{GS} =0V,	-	-	-1	μA
I _{GSS}	Gate to Body Leakage Current	V _{DS} =0V, V _{GS} = ±20V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D = -250μA	-1.0	-1.5	-2.5	V
R _{DS(on)}	Static Drain-Source on-Resistance note3	V _{GS} = -10V, I _D = -20A	-	3.3	4.1	mΩ
		V _{GS} = -4.5V, I _D = -10A	-	5.1	6.6	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} = -15V, V _{GS} =0V, f=1.0MHz	-	8180	-	pF
C _{oss}	Output Capacitance		-	945	-	pF
C _{rss}	Reverse Transfer Capacitance		-	650	-	pF
Q _g	Total Gate Charge	V _{DD} = -15V, I _D = -30A, V _{GS} = -10V	-	125	-	nC
Q _{gs}	Gate-Source Charge		-	26	-	nC
Q _{gd}	Gate-Drain(“Miller”) Charge		-	20	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DD} = -15V, I _D = -30A, V _{GS} = -10V, R _{GEN} =2.4Ω	-	17	-	ns
t _r	Turn-on Rise Time		-	143	-	ns
t _{d(off)}	Turn-off Delay Time		-	98	-	ns
t _f	Turn-off Fall Time		-	106	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	-100	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	-320	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} =0V, I _S = -30A	-	-	-1.2	V

Typical Performance Characteristics

Figure 1: Output Characteristics

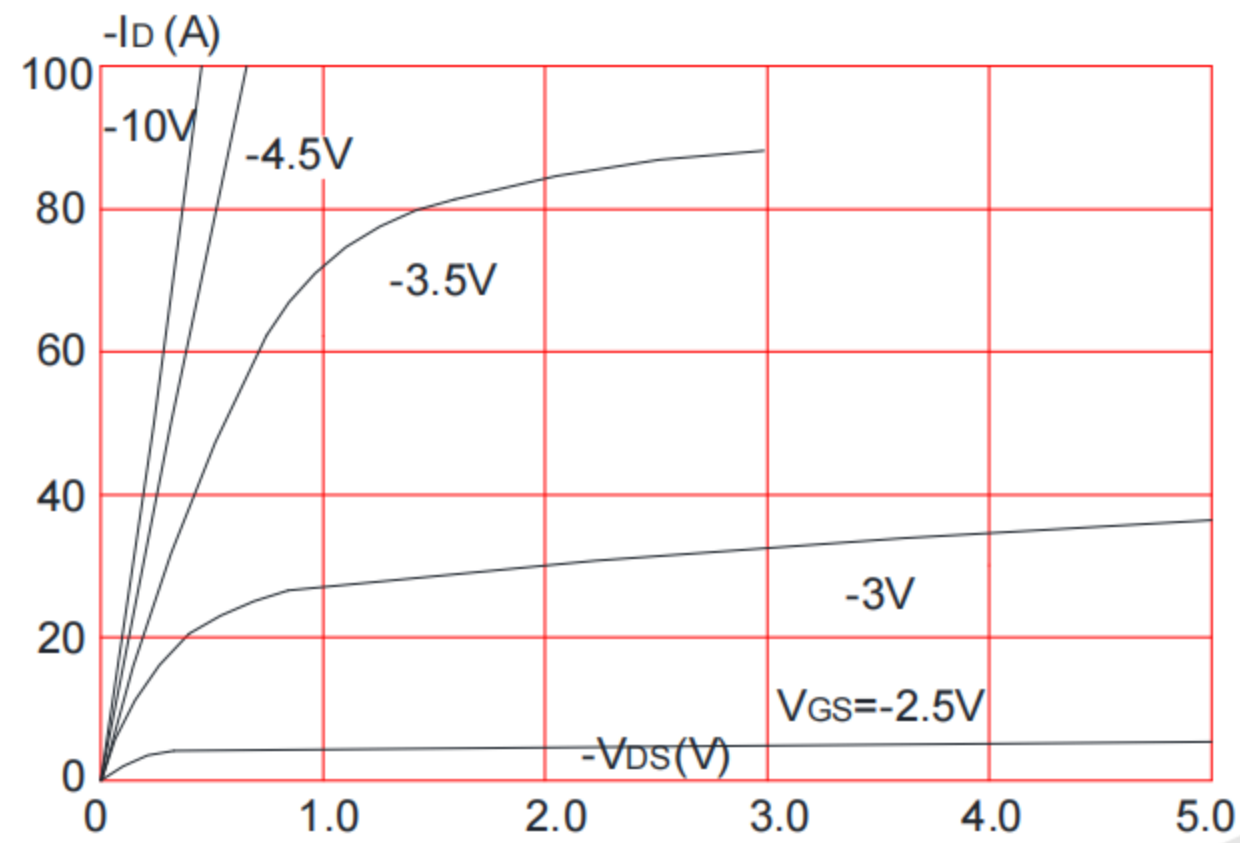


Figure 2: Typical Transfer Characteristics

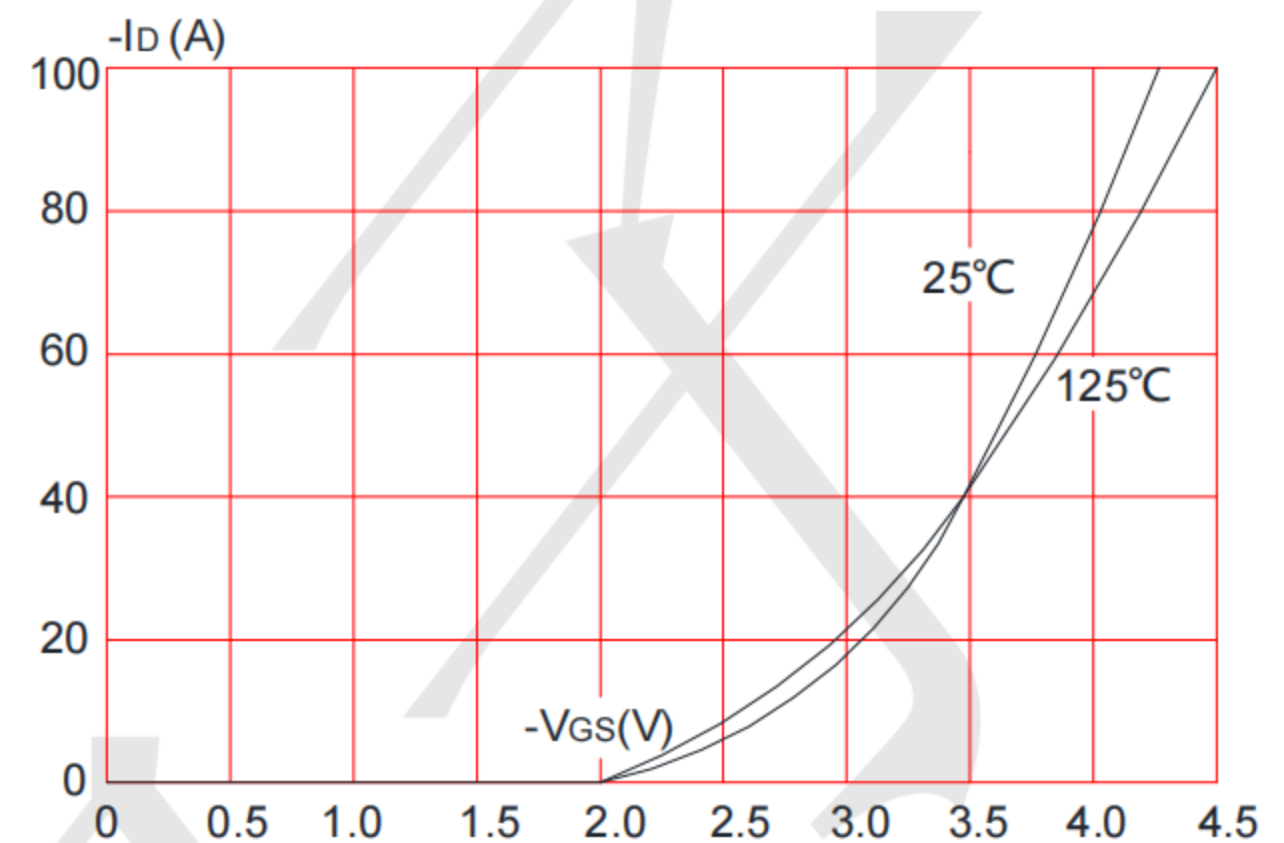


Figure 3: On-resistance vs. Drain Current

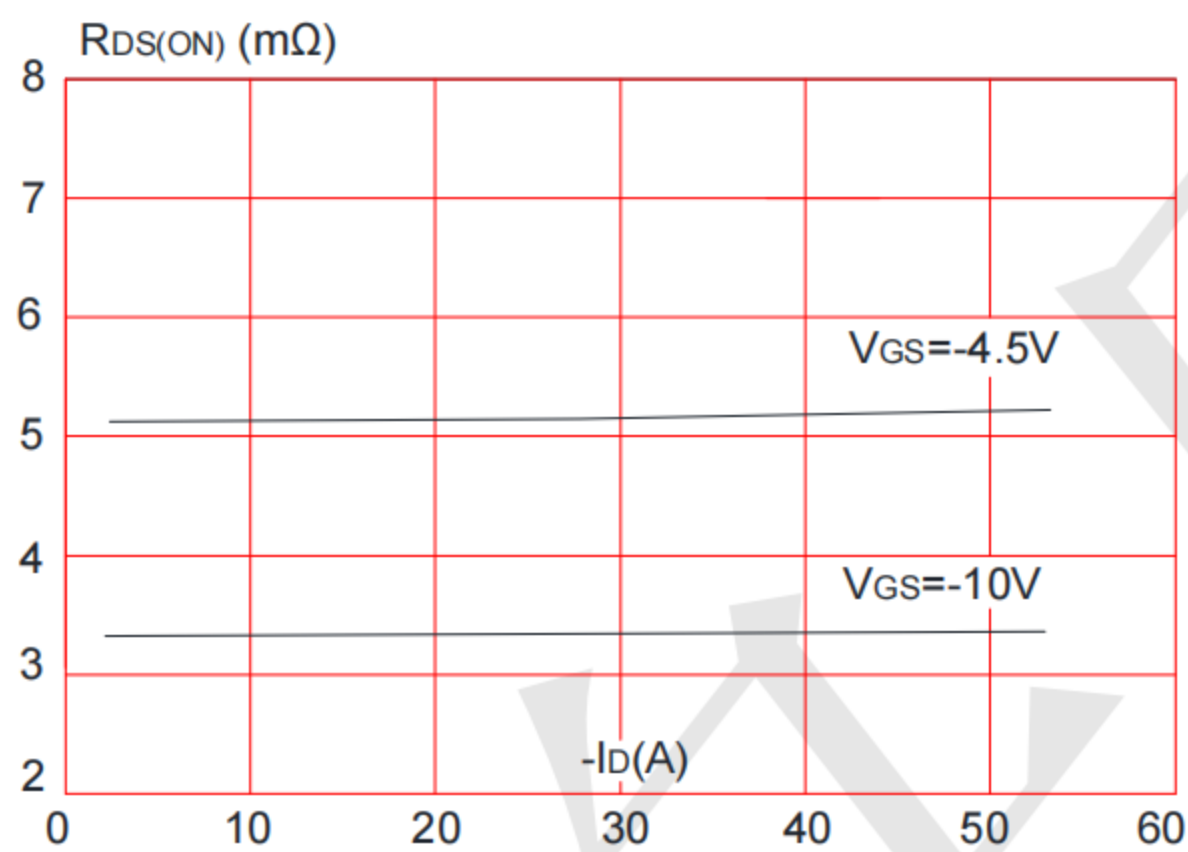


Figure 4: Body Diode Characteristics

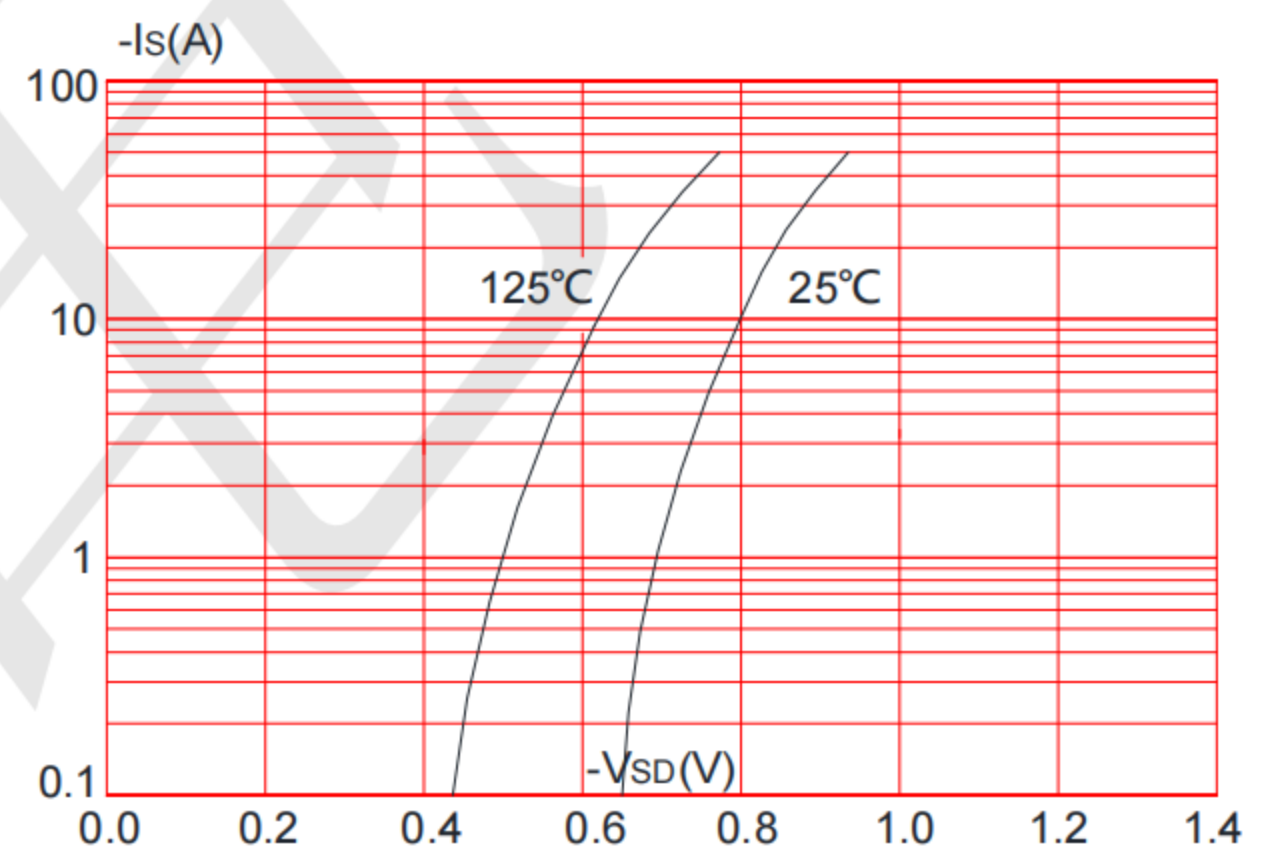


Figure 5: Gate Charge Characteristics

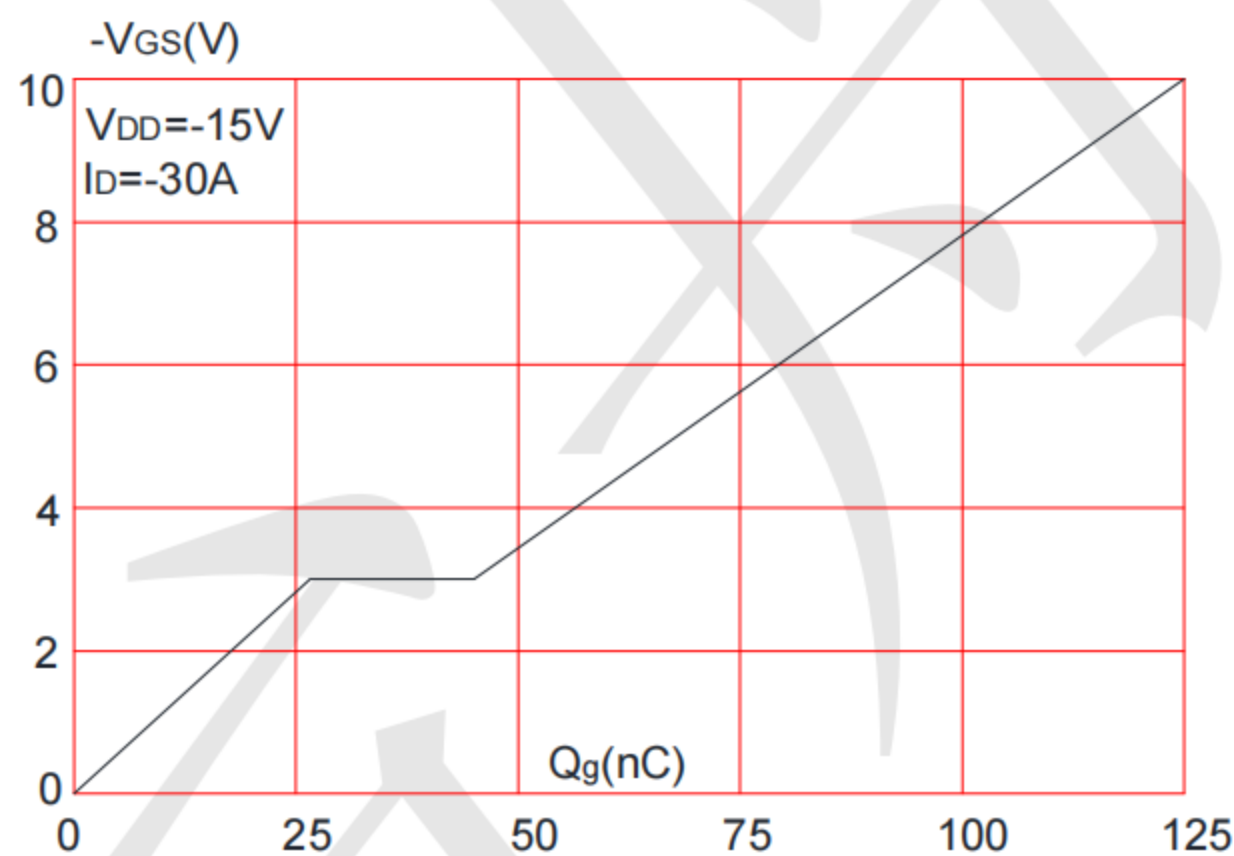


Figure 6: Capacitance Characteristics

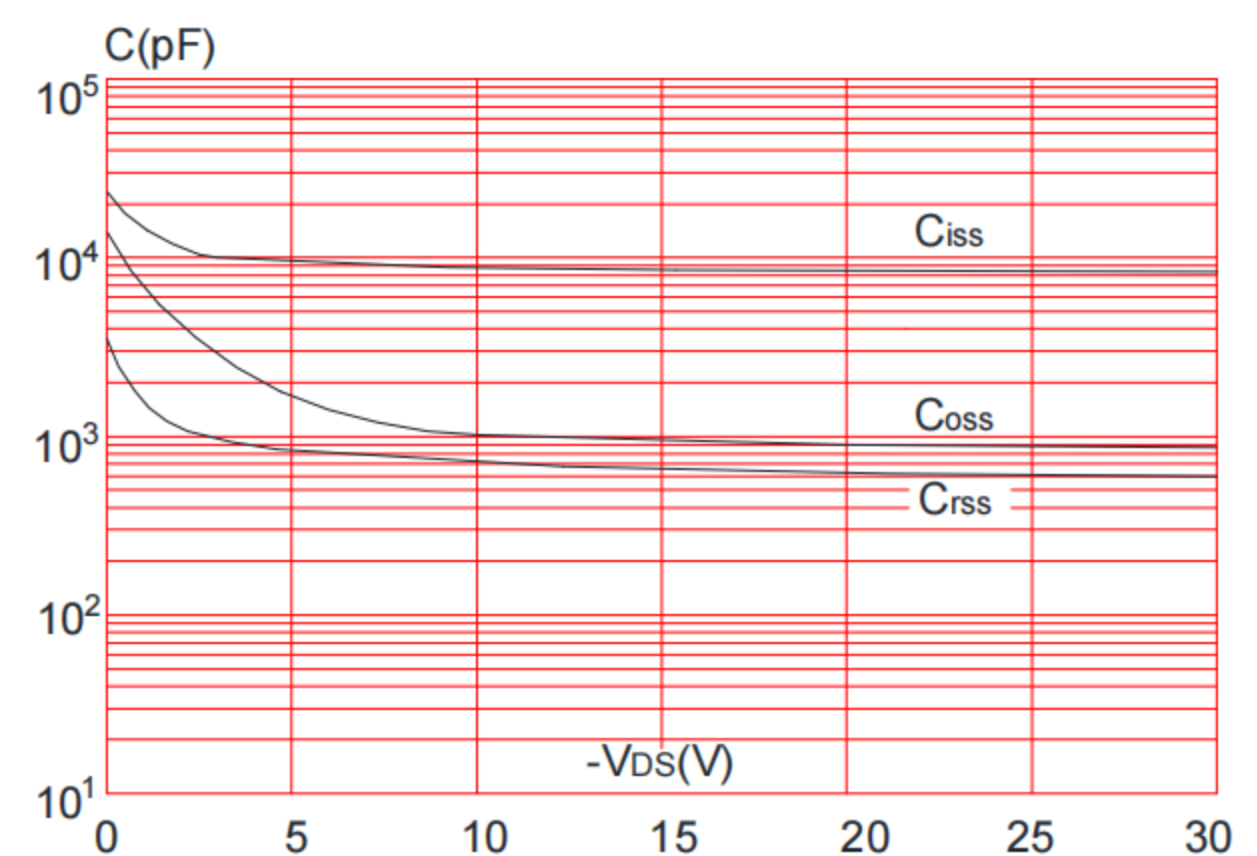


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

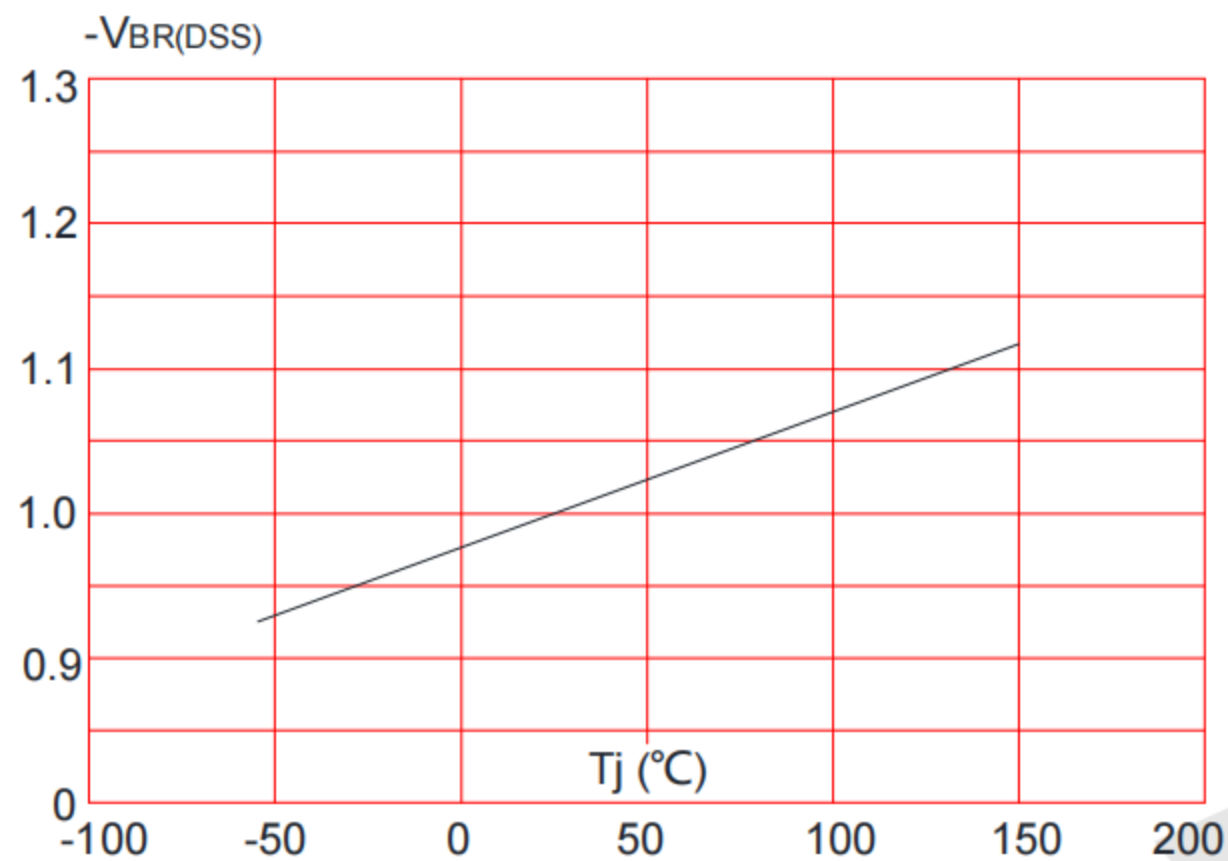


Figure 8: Normalized on Resistance vs. Junction Temperature

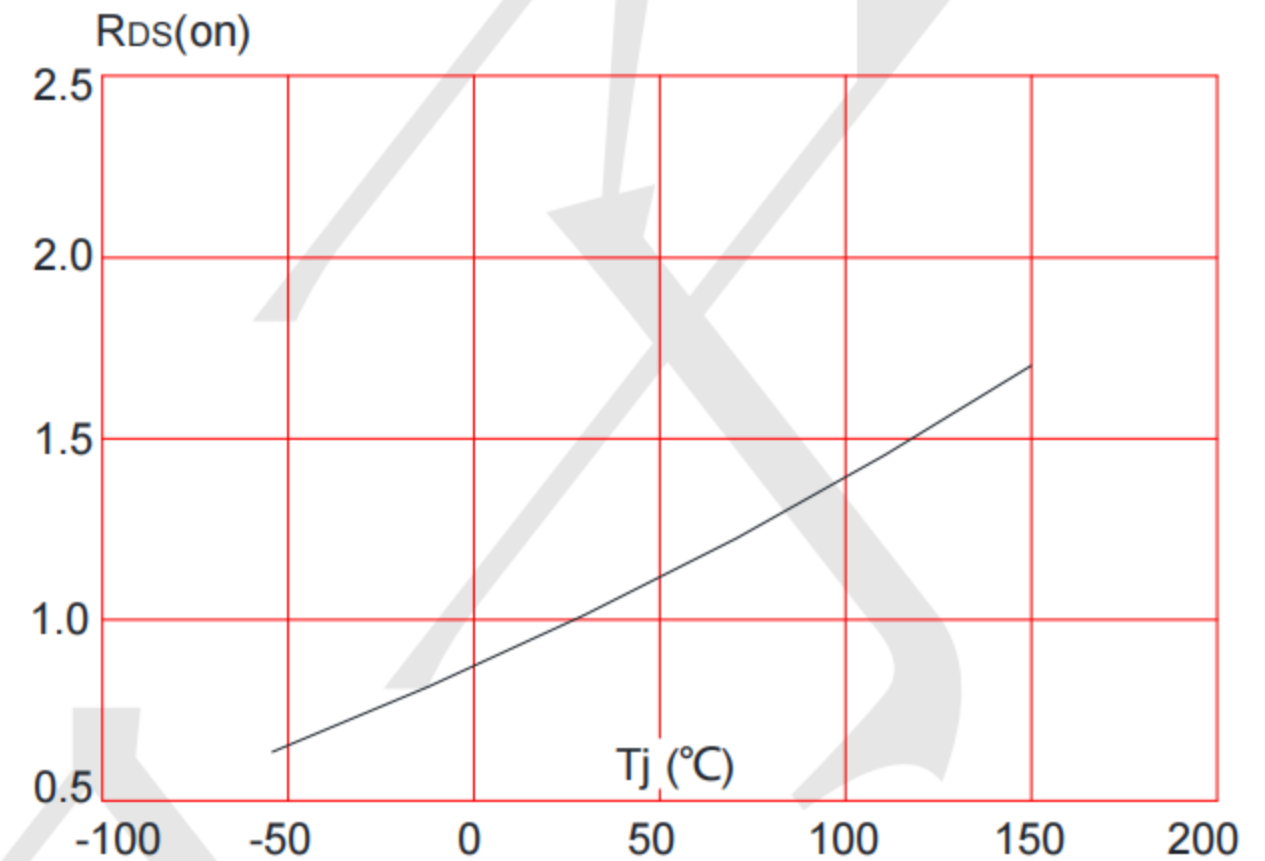


Figure 9: Maximum Safe Operating Area

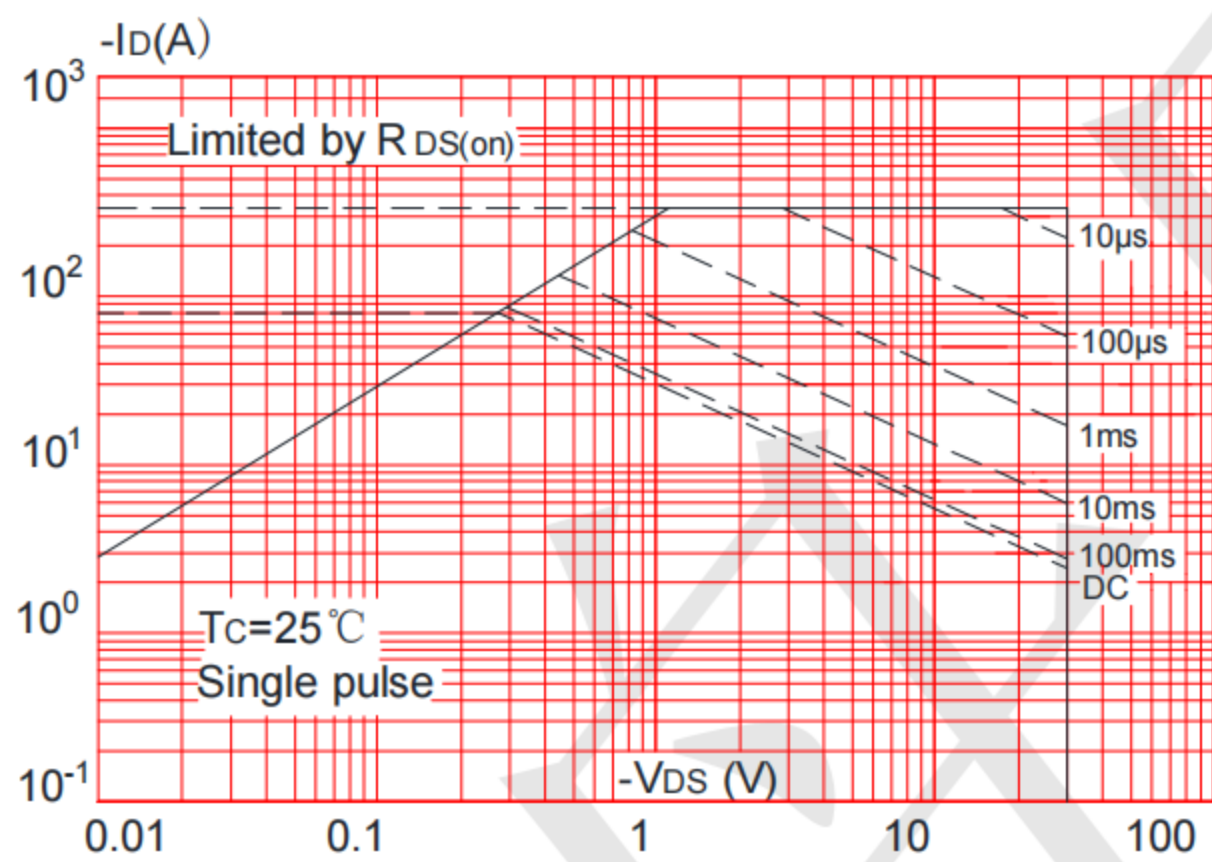


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

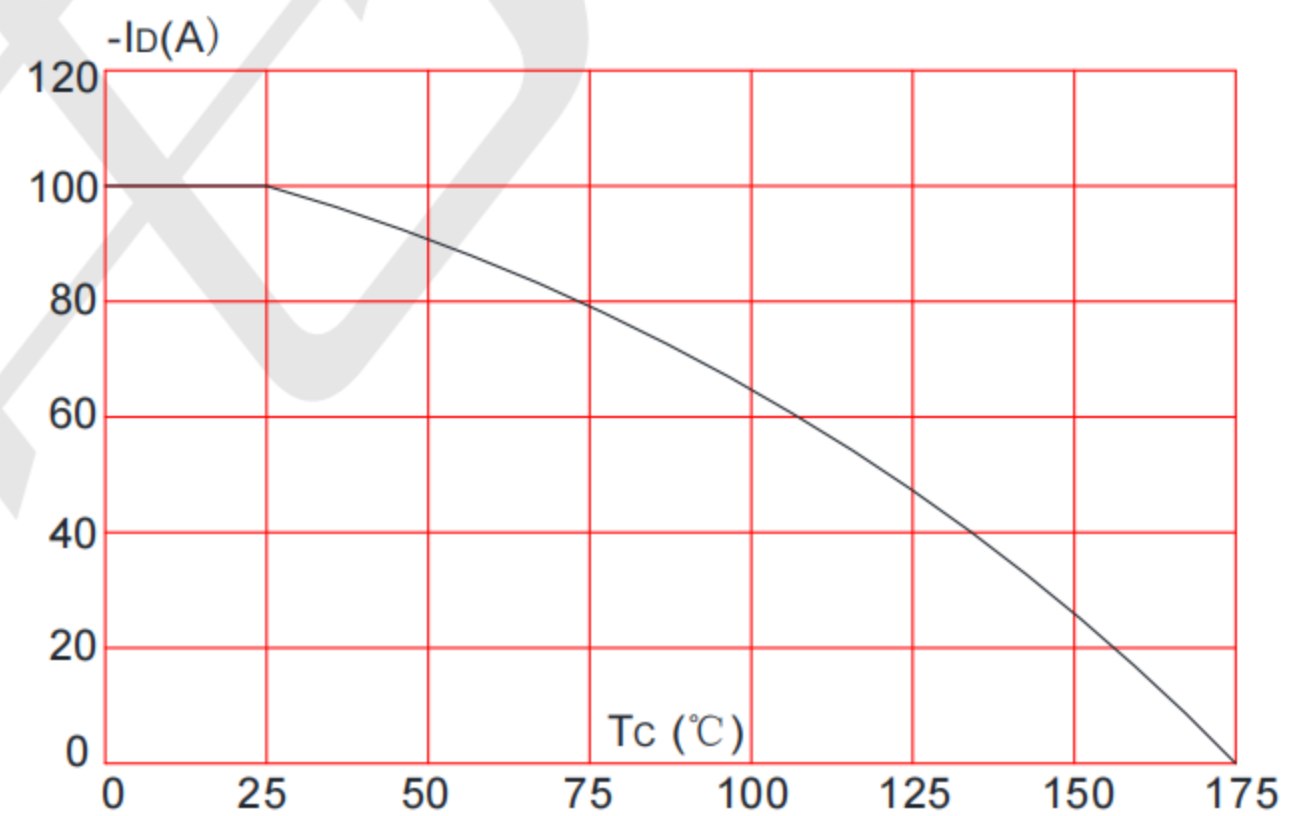
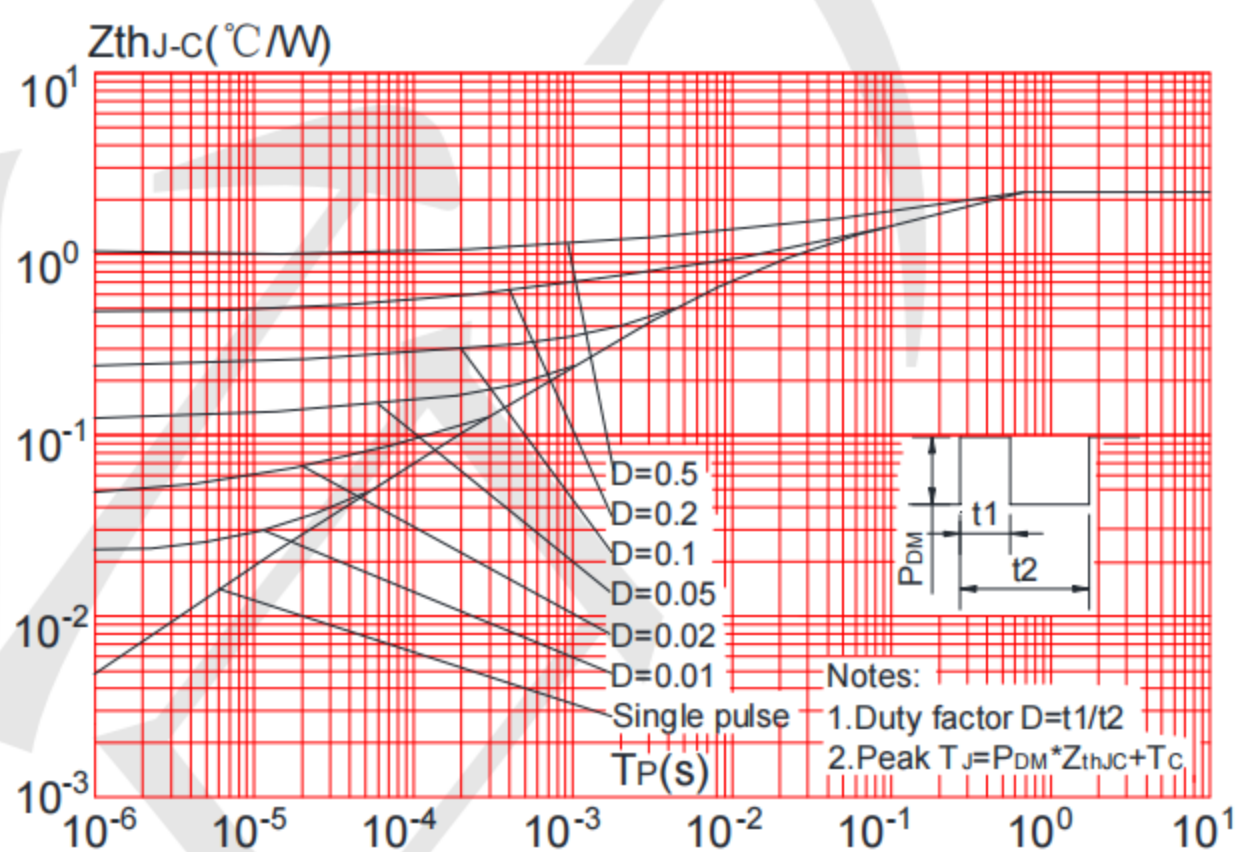
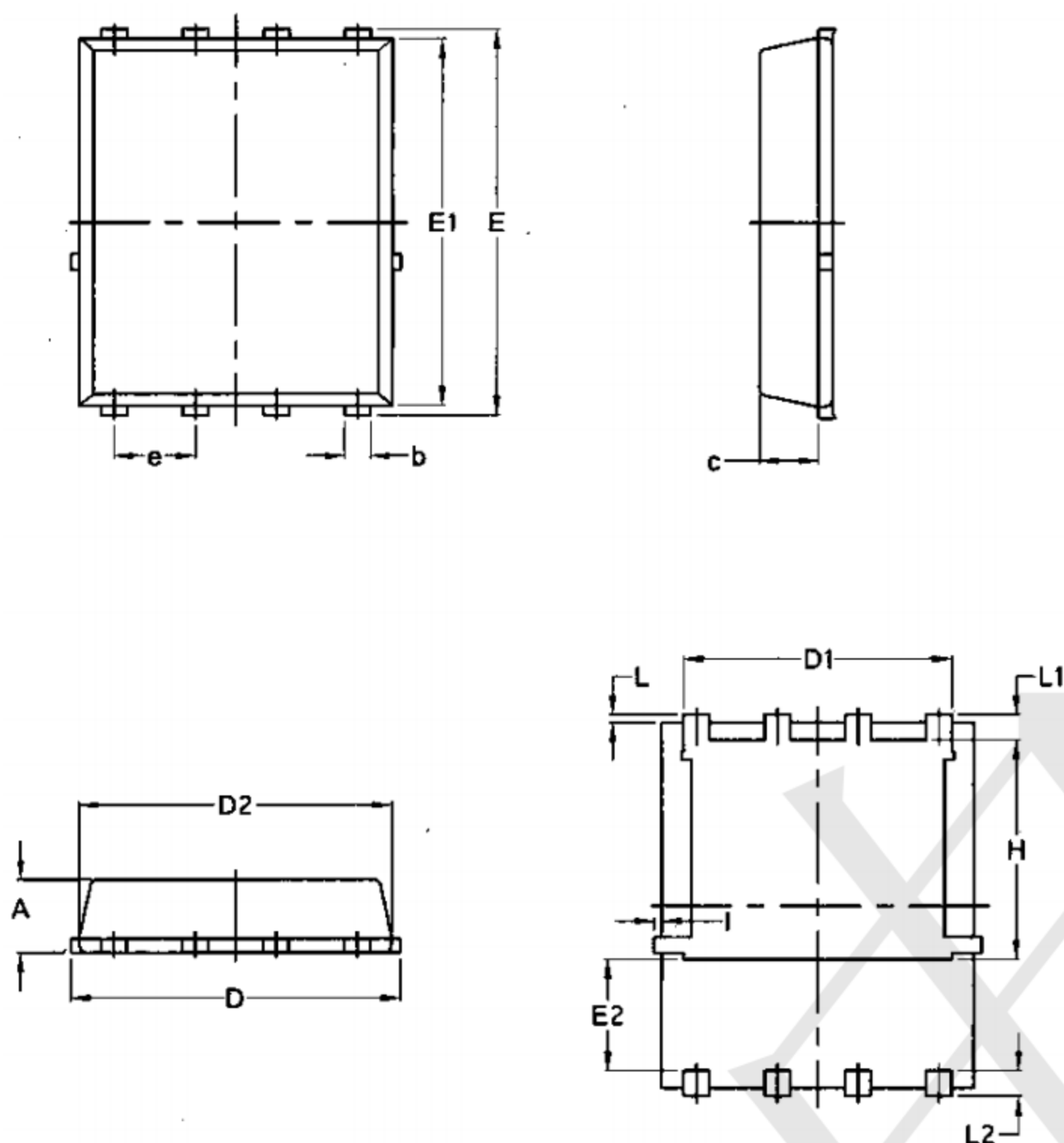


Figure 11: Maximum Effective Transient Thermal Impedance, Junction-to-Case



Package Outline Dimensions PDFN5*6-8L



Symbol	Common			
	mm		Inch	
	Mim	Max	Min	Max
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.824	0.0970	0.0324	0.082
D	4.80	5.40	0.1890	0.2126
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.00	0.1890	0.1969
E	5.95	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	1.60	/	0.0630	/
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.50	0.0150	0.0197
H	3.30	3.50	0.1299	0.1378
I	/	0.18	/	0.0070