

N-Channel 150V MOSFET

E150N9P0HL1

V_{DS} (V)	$R_{DS(on),max}$ (m Ω)	I_D (A)
150V	9 @ $V_{GS} = 10V$	60

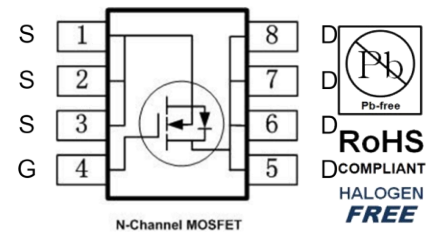
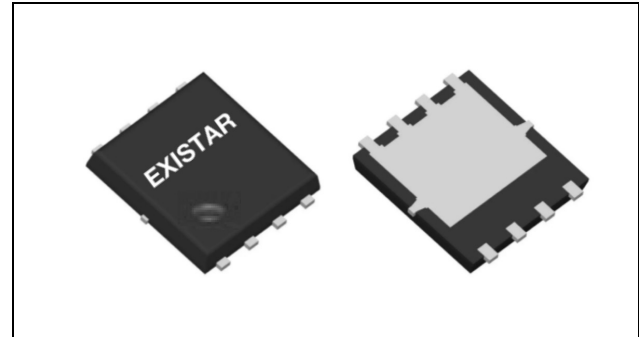
Features

- Low $R_{DS(on)}$ trench technology
- Low thermal impedance
- Fast switching speed
- 100% avalanche tested

Applications

- DC/DC conversion
- Power switch
- PD charger
- Moto driver

PDFN5X6



Package And Ordering Information

Ordering code	Package	Marking
E150N9P0HL1	PDFN5x6	E150N9P0HL1

Ordering Information

Package	Units/ Reel	Reels/ Inner Box	Units/ Inner Box
PDFN5x6	5000	1	5000

Key Performance Parameters

Parameter	Value	Unit
VDS, min @ Tj(max)	150	V
ID, pulse	240	A
RDS(ON), max @ VGS=10V	9	mΩ
Qg	69	nC

Absolute Maximum Ratings at Tj=25°C Unless Otherwise Noted

Parameter	Symbol	Limit	Unit
Drain-source voltage	V _{DS}	150	V
Gate-source voltage	V _{GS}	±20	
Continuous drain current	I _D	T _C =25°C	60
		T _C =100°C	47
Pulsed drain current	I _{D,pulse}	240	A
Avalanche energy, single pulse	E _{AS}	320	mJ
Power dissipation	P _D	T _C =25°C	60
		T _A =25°C	2
Operating junction and storage temperature range	T _J , T _{stg}	-55 to +150	°C

Thermal Characteristics

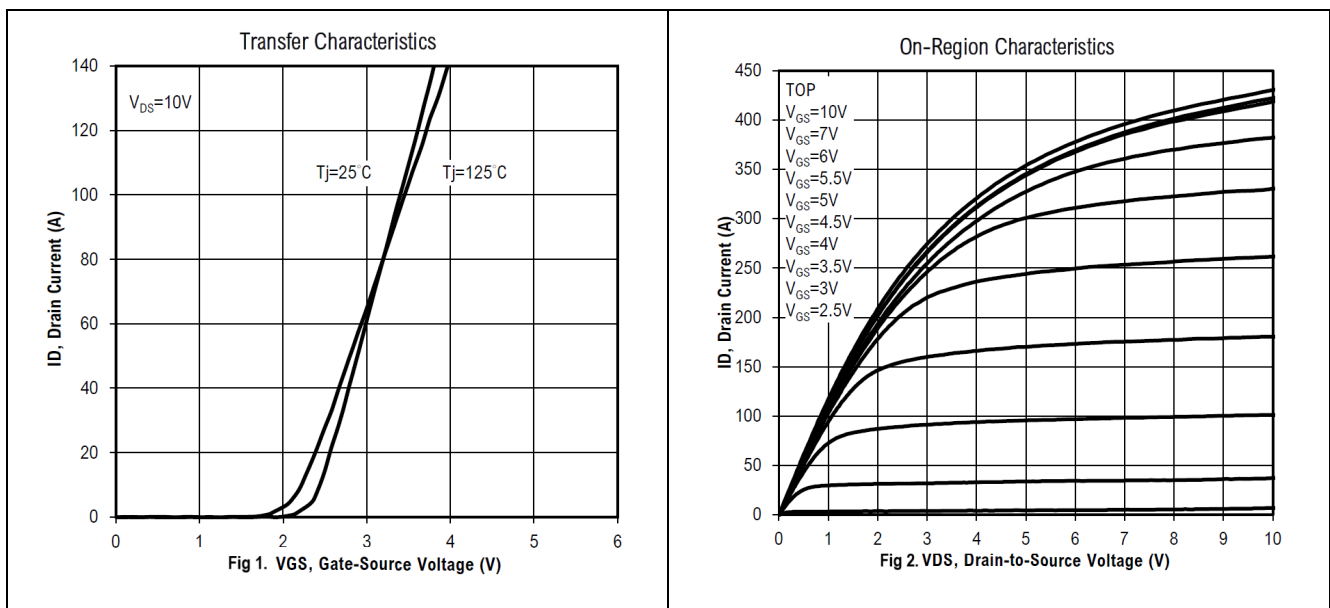
Parameter	Symbol	Max.	Unit
Thermal resistance, junction-to-case	R _{θJC}	2	°C/W
Thermal resistance, junction-to-ambient	R _{θJA}	62	

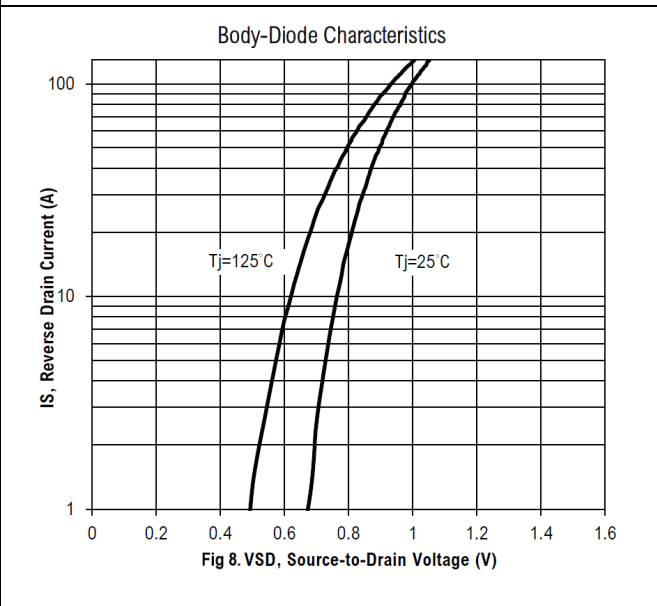
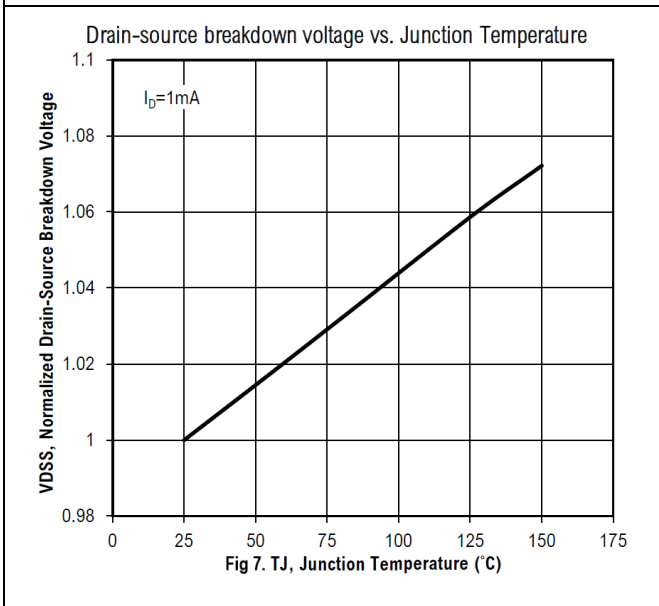
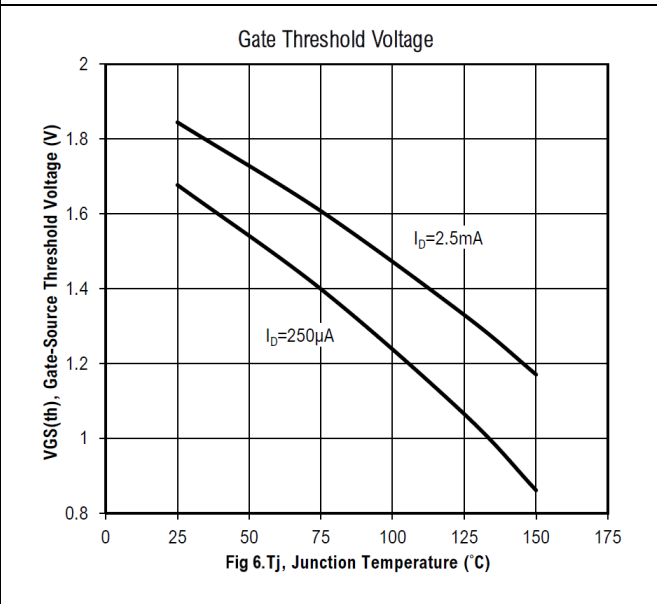
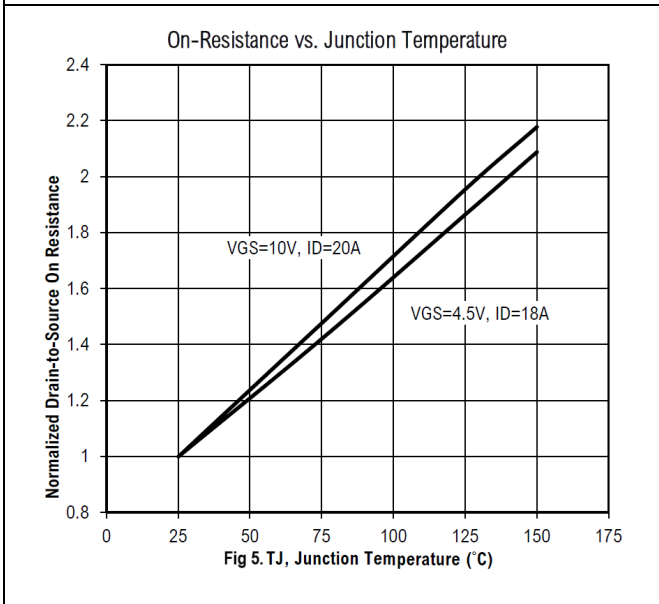
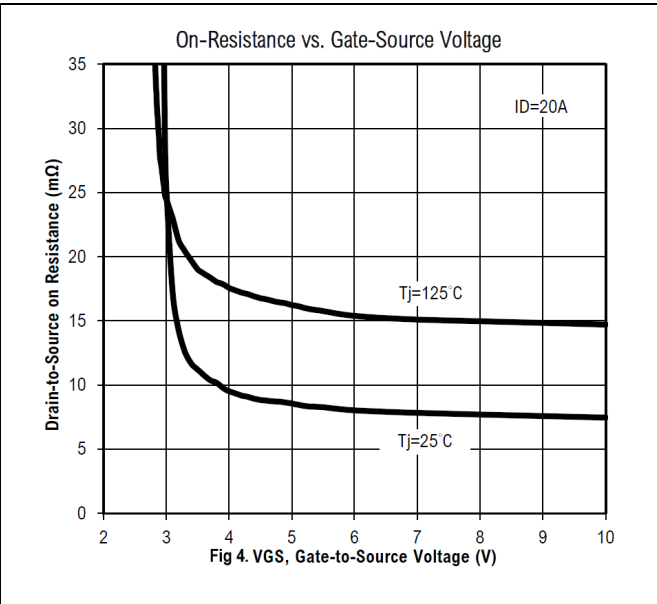
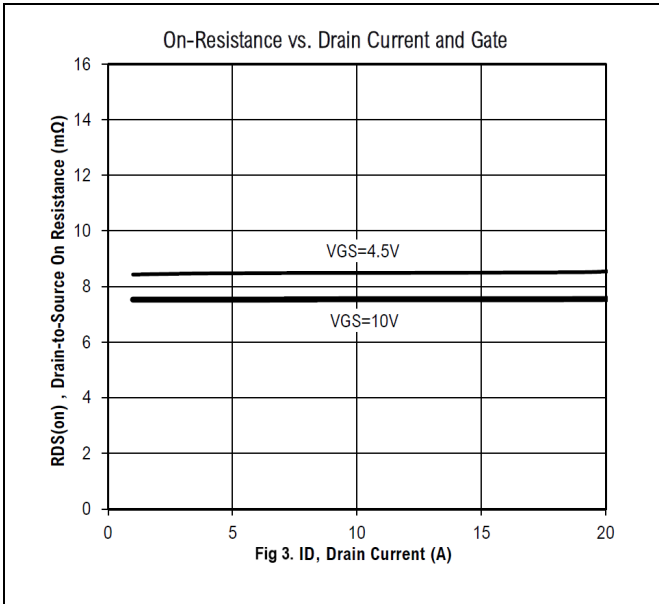
Electrical Characteristics at Tj=25°C unless otherwise specified

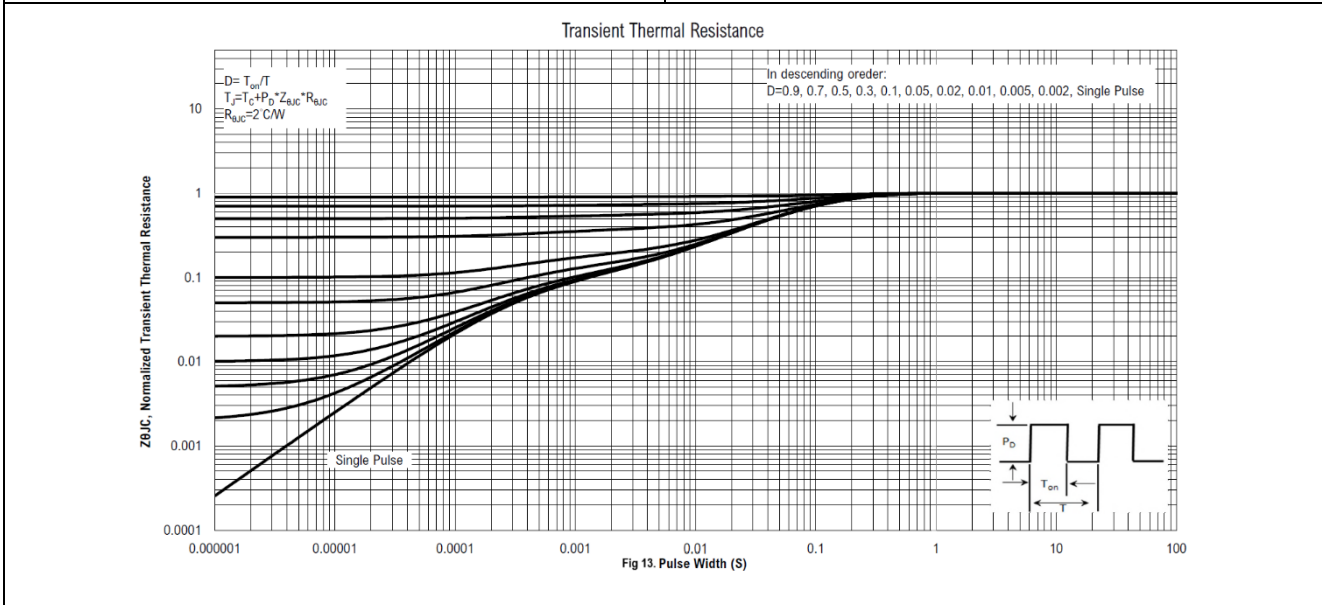
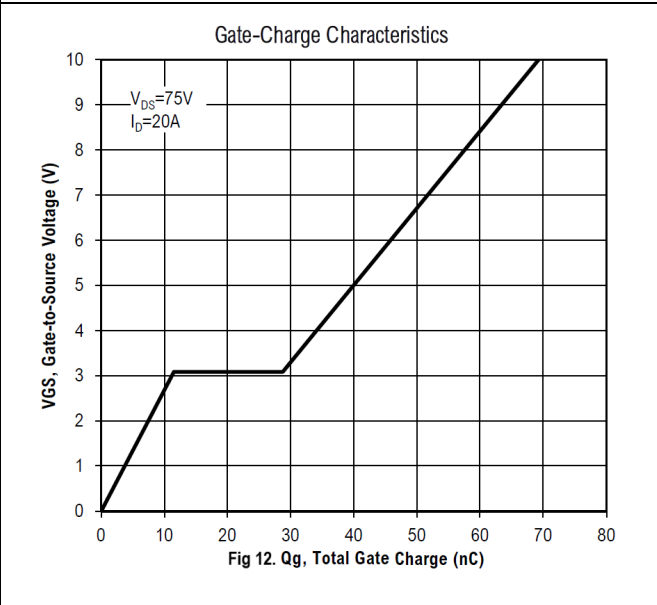
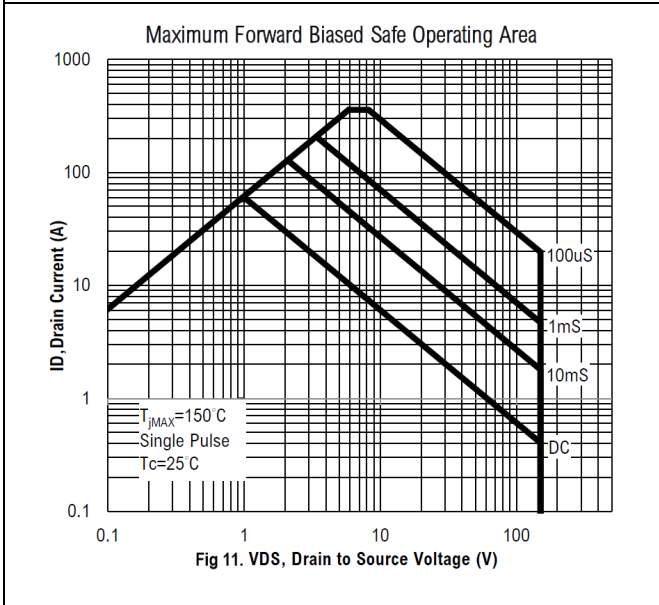
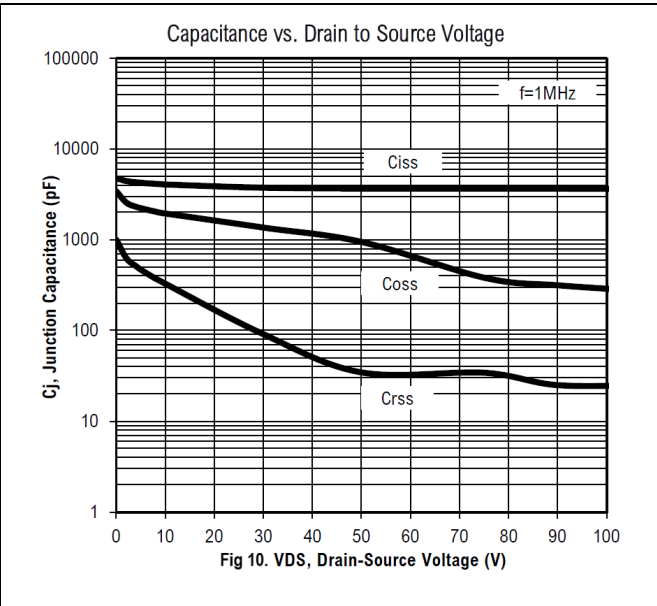
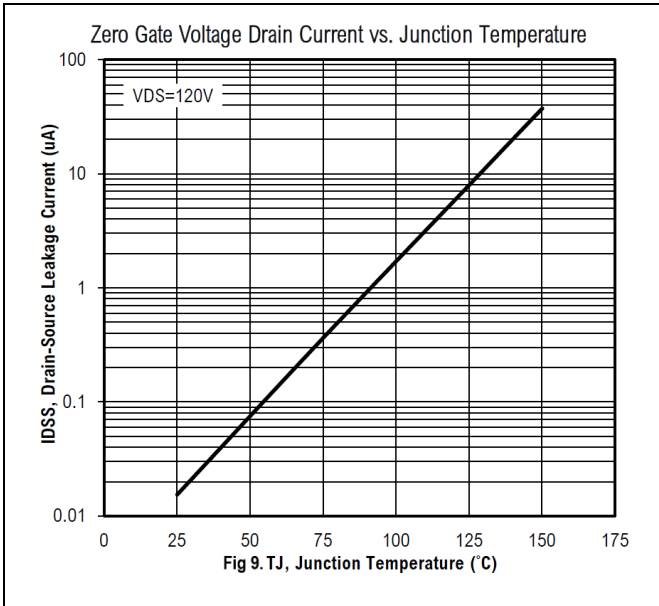
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Static						
Drain to source breakdown voltage	V _{(BR)DSS}	150			V	V _{GS} = 0, I _D = 250 μA
Gate-source threshold voltage	V _{GS(th)}	1.3	1.5	2	V	V _{DS} = V _{GS} , I _D = 250 μA
Gate-body leakage	I _{GSS}			±100	nA	V _{DS} = 0 V, V _{GS} = ±20 V
Zero gate voltage drain current	I _{DSS}			1	μA	V _{DS} = 120 V, V _{GS} = 0 V
Drain-source on-resistance	R _{DS(on)}		8.2	9	mΩ	V _{GS} = 10 V, I _D = 25 A
Drain-source on-resistance	R _{DS(on)}		9.4	10.5	mΩ	V _{GS} = 4.5 V, I _D = 15 A

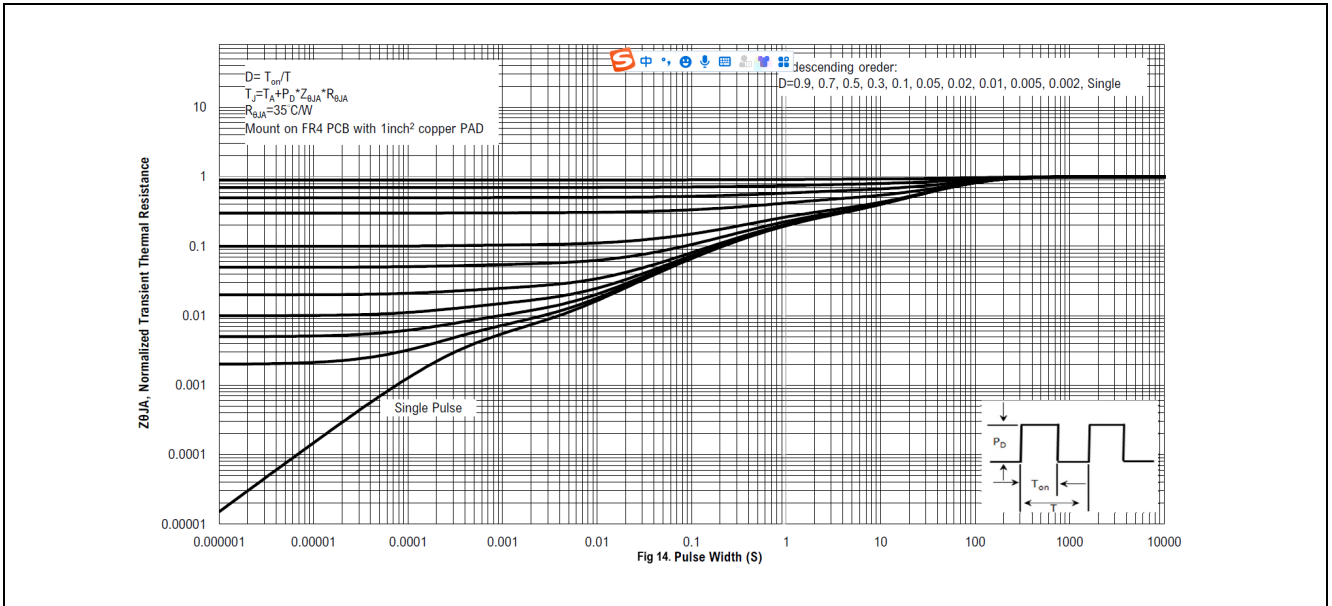
Forward transconductance	g_{fs}		44		S	$V_{DS} = 5\text{ V}, I_D = 25\text{ A}$
Gate resistance	R_g		0.95		Ω	$f = 1\text{ MHz}$
Gate Charge						
Total gate charge	Q_g		69		nC	$V_{DS} = 75\text{ V}, I_D = 20\text{ A}, V_{GS} = 10\text{ V}$
Gate-source charge	Q_{gs}		11.5			
Gate-drain charge	Q_{gd}		17.2			
Dynamic						
Turn-on delay time	$t_{d(on)}$		24.8		ns	$V_{DS} = 75\text{ V}, I_D = 20\text{ A}, V_{GS} = 10\text{ V}, R_{GEN} = 3.3\ \Omega$
Rise time	t_r		15.6			
Turn-off delay time	$t_{d(off)}$		23.3			
Fall time	t_f		6.4			
Input capacitance	C_{iss}		3656		pF	$V_{DS} = 75\text{ V}, V_{GS} = 0\text{ V}, f = 1\text{ MHz}$
Output capacitance	C_{oss}		383			
Reverse transfer capacitance	C_{rss}		33			
Body Diode						
Diode forward voltage	V_{SD}			1.2	V	$V_{GS} = 0\text{ V}, I_F = 20\text{ A}$
Reverse recovery time	t_{rr}		91		ns	$V_R = 75\text{ V}, I_S = 20\text{ A}, di/dt = 100\text{ A}/\mu\text{s}$
Reverse recovery charge	Q_{rr}		243		nC	

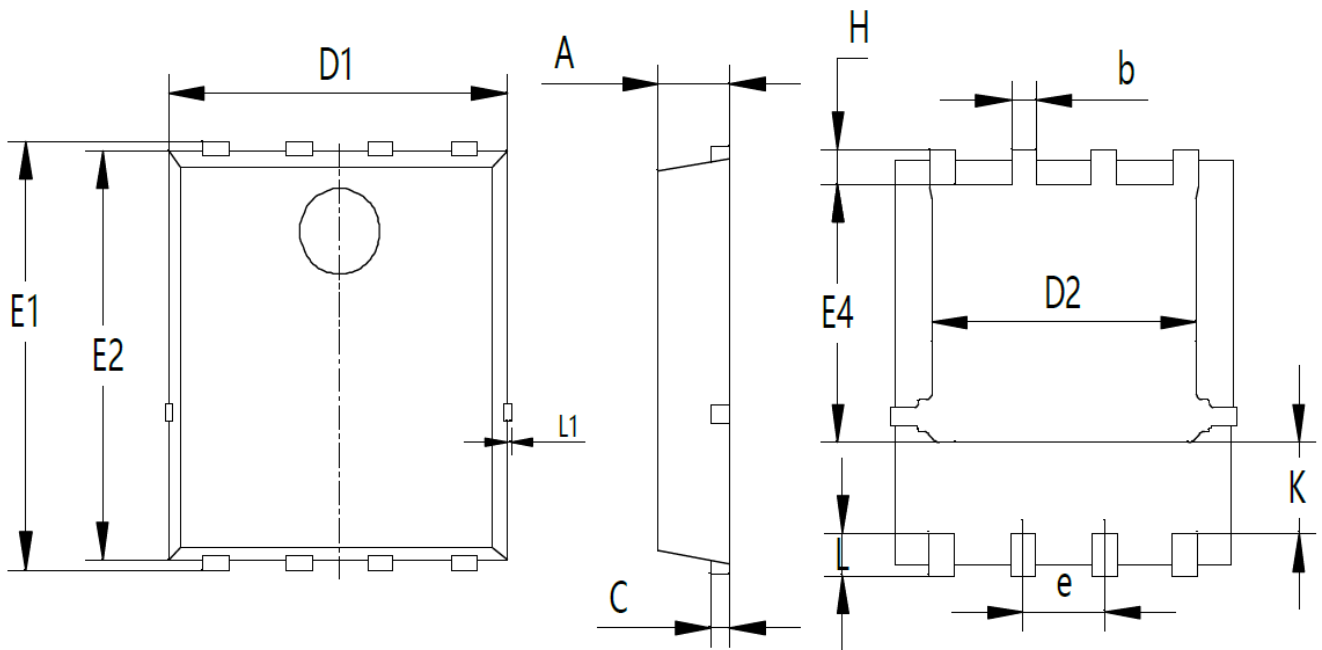
Electrical Characteristics Diagrams









Package Outline Dimensions


Symbol	mm		
	Min	Nom	Max
A	1.00	1.10	1.20
b	0.30	0.40	0.50
c	0.154	0.254	0.354
D1	5.00	5.20	5.40
D2	3.80	4.10	4.25
e	1.17	1.27	1.37
E1	5.95	6.15	6.35
E2	5.66	5.86	6.06
E4	3.52	3.72	3.92
H	0.40	0.50	0.60
L	0.30	0.60	0.70
L1	0.12 REF		
K	1.15	1.30	1.45

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