

N-Channel 150V MOSFET

E150N9P0HL1

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

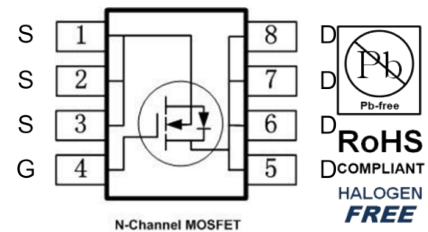
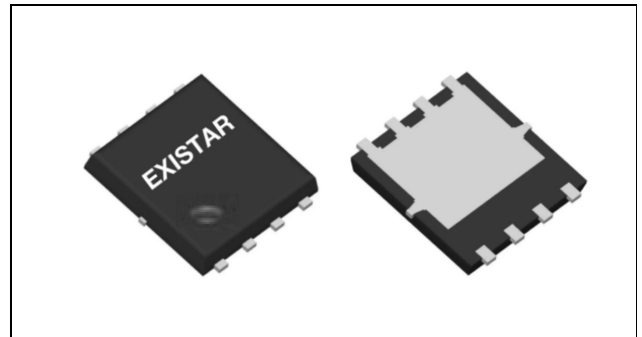
Features

- 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	T _C =25°C	I _D	60	A
	T _C =100°C		47	
Pulsed drain current		I _{D,pulse}	240	
Avalanche energy, single pulse		E _{AS}	320	mJ
Power dissipation	T _C =25°C	P _D	60	W
	T _A =25°C		2	
Operating junction and storage temperature range		T _J , T _{stg}	-55 to +150	°C

Thermal Characteristics

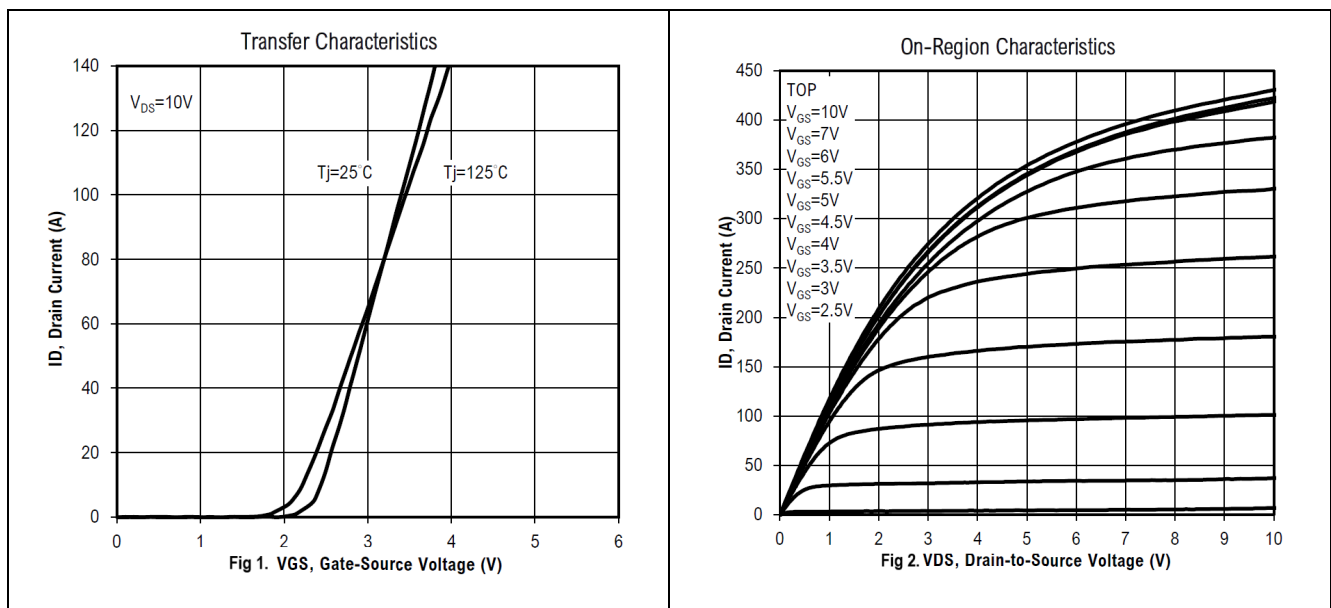
Parameter		Symbol	Max.	Unit
Thermal resistance, junction-to-case	Steady state	R _{θJC}	2	°C/W
Thermal resistance, junction-to-ambient	Steady state	R _{θJA}	62	

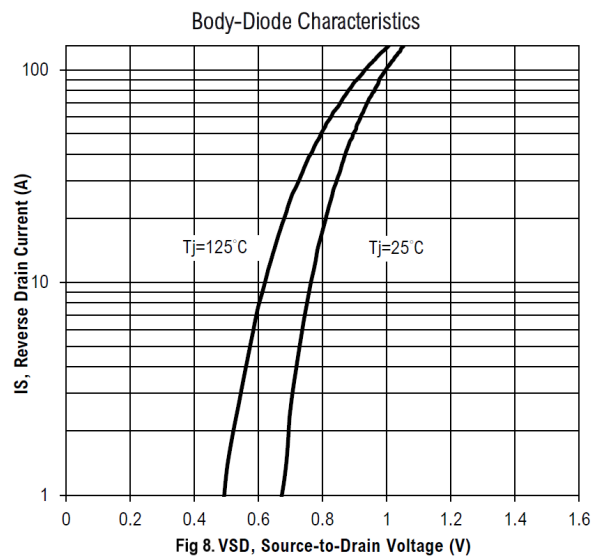
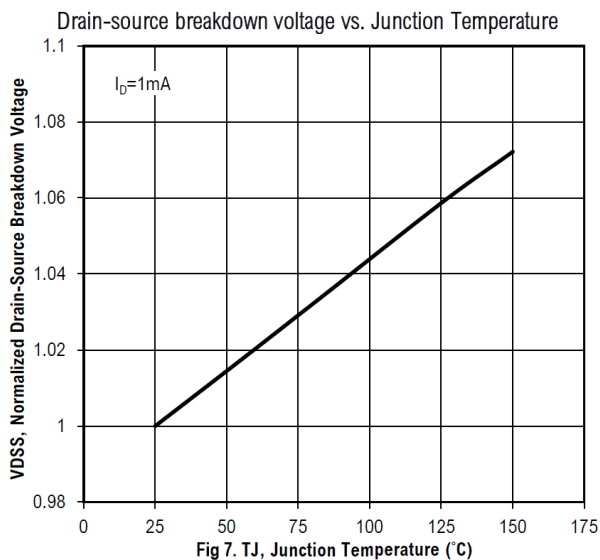
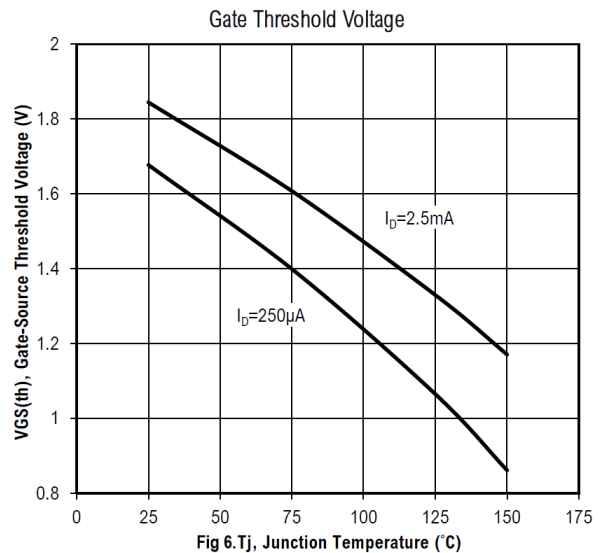
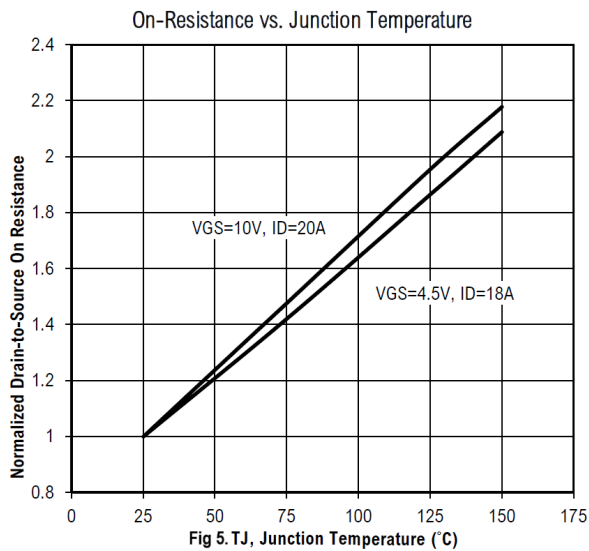
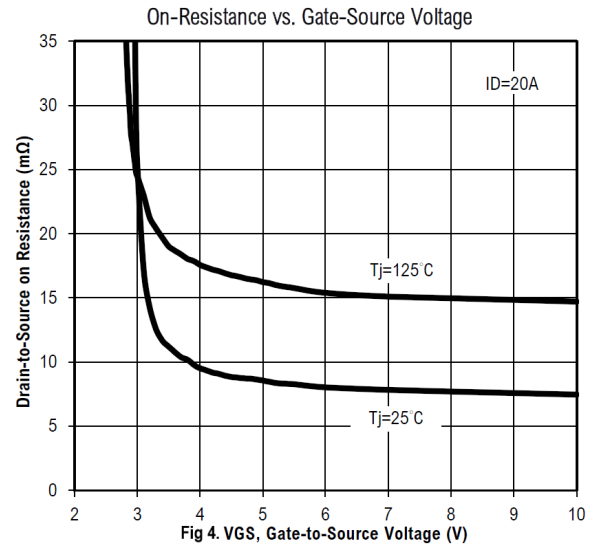
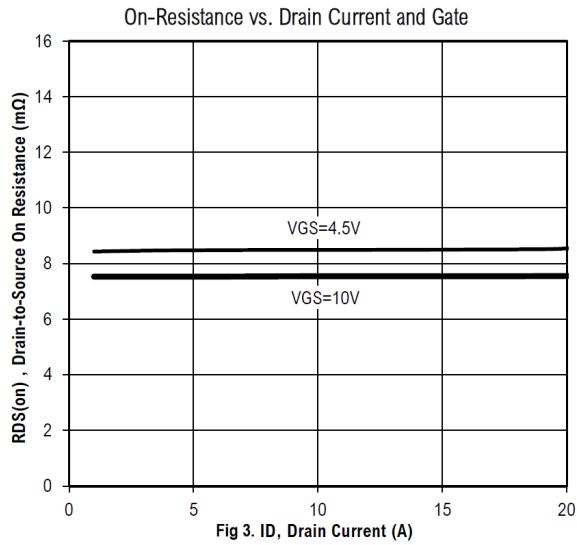
Electrical Characteristics at Tj=25°C unless otherwise specified

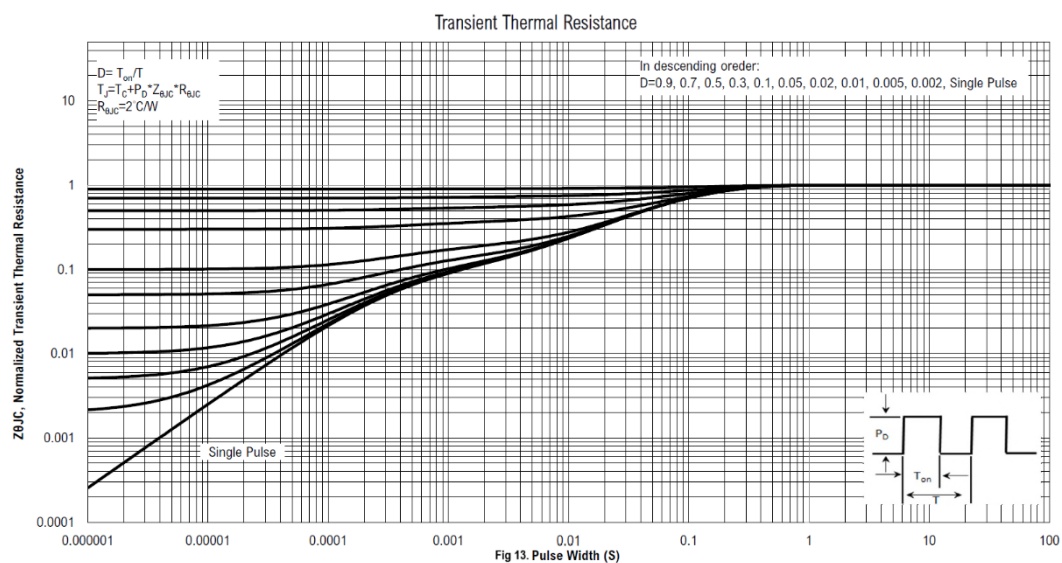
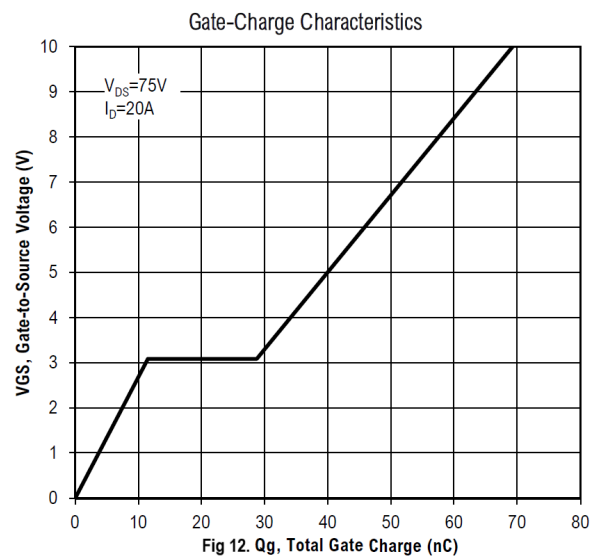
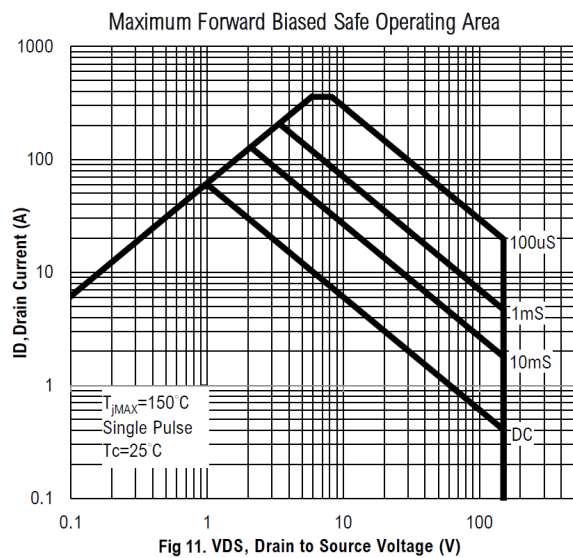
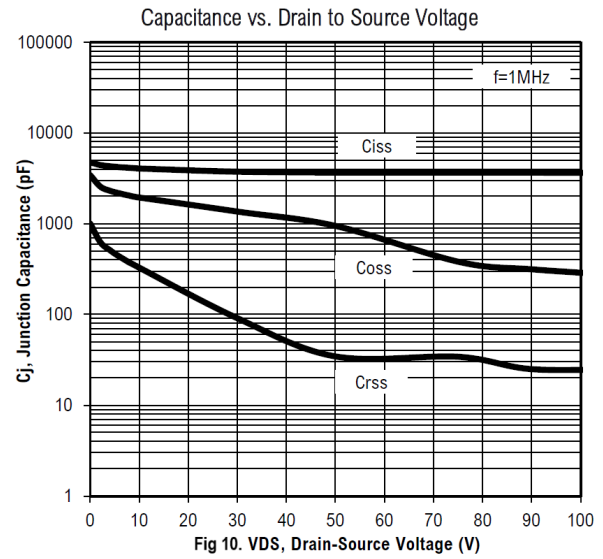
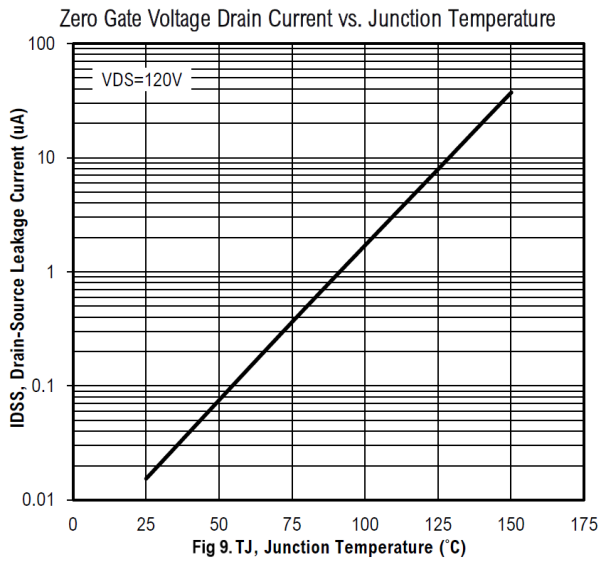
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Static						
Drain to source breakdown voltage	V _{(BR)DSS}	150			V	V _{GS} = 0, I _D = 250 μA
Gate-source threshold voltage	V _{GS(th)}	1.3	1.5	2	V	V _{DS} = V _{GS} , I _D = 250 μA
Gate-body leakage	I _{GSS}			±100	nA	V _{DS} = 0 V, V _{GS} = ±20 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

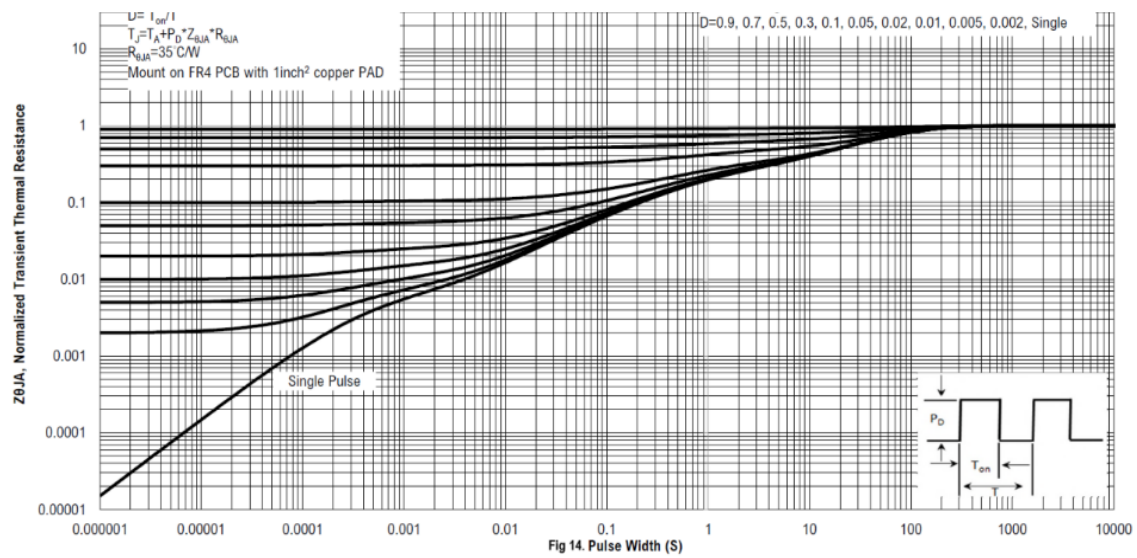
Forward transconductance	gfs		44		S	VDS = 5 V, ID = 25 A
Gate resistance	Rg		0.95		Ω	f=1MHz
Gate Charge						
Total gate charge	Qg		69		nC	VDS = 75 V, ID = 20 A, VGS = 10 V
Gate-source charge	Qgs		11.5			
Gate-drain charge	Qgd		17.2			
Dynamic						
Turn-on delay time	td(on)		24.8		ns	VDS = 75 V, ID =20 A, VGS = 10 V, RGEN =3.3 Ω
Rise time	tr		15.6			
Turn-off delay time	td(off)		23.3			
Fall time	tf		6.4			
Input capacitance	Ciss		3656		pF	VDS =75 V, VGS = 0 V, f = 1MHz
Output capacitance	Coss		383			
Reverse transfer capacitance	Crss		33			
Body Diode						
Diode forward voltage	VSD			1.2	V	VGS = 0 V, IF = 20 A
Reverse recovery time	trr		91		ns	VR= 75 V, IS =20 A, di/dt = 100 A/μs
Reverse recovery charge	Qrr		243		nC	

Electrical Characteristics Diagrams

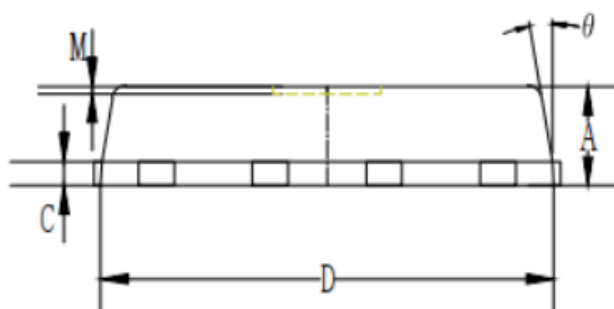
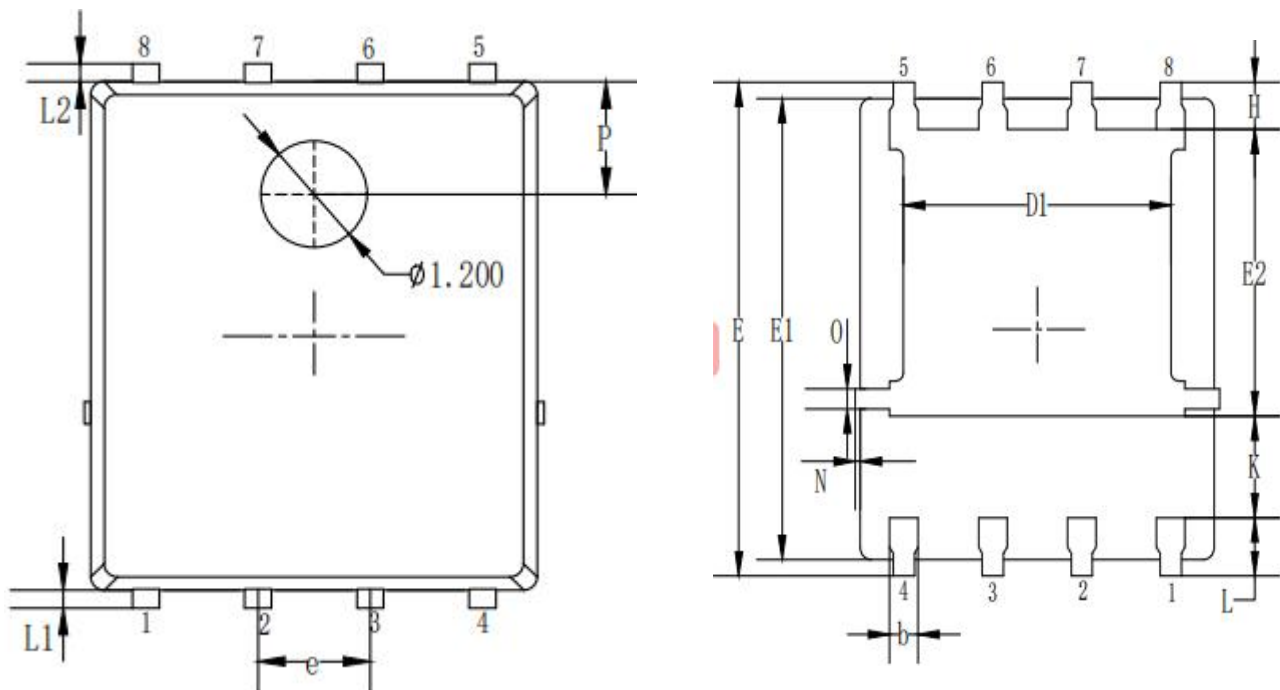








Package Outline Dimensions



Symbols	Millimeters		
	MIN.	NOM.	MAX.
A	0.90	1.05	1.20
b	0.35	0.40	0.50
C	0.20	0.25	0.35
D	4.90	5.05	5.10
D1	3.72	3.82	3.92
E	6.00	6.15	6.25
E1	5.60	5.75	5.90
E2	3.47	3.57	3.67
e	1.27 BSC.		
H	0.48	0.58	0.68
K	1.17	1.27	1.37
L	0.64	0.69	0.75
L1/L2	0.10 ~ 0.20		
θ	8°	10°	12°
M	0.08 REF.		
N	0	-	0.15
O	0.25 REF.		
P	1.28 REF.		

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