

P-Channel 100V MOSFET

E40P100KC

V _{DS} (V)	R _{DS(on),max} (mΩ)	I _D (A)
-100	45@ V _{GS} = -10V	-40

Features

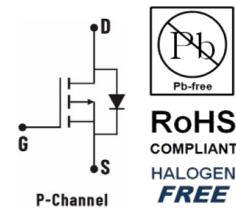
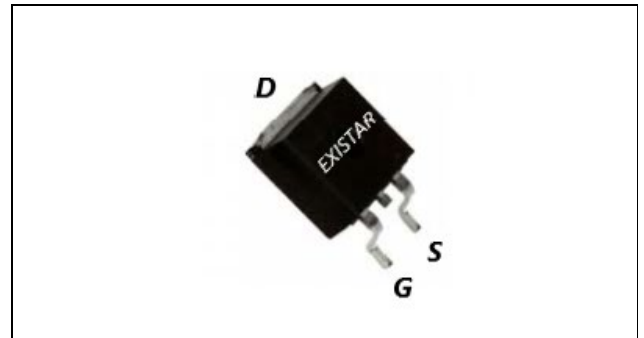
- Trench MOS technology
- Low R_{ds(on)}, Low Q_g
- Excellent Gate Charge x R_{ds(ON)} Product (FOM)

Applications

- Fast switching

Package and ordering information

Ordering code	Package	Device code
E40P100KC	TO252	---

TO252


Absolute Maximum Ratings T_A=25°C unless otherwise noted

Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V _{DS}	-100	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous drain current	TC=25°C	I _D	-40	A
	TC=100°C	I _D	-19	A
Drain Current – Pulsed		I _{DM}	-120	A
Maximum Power Dissipation		P _D	102	W
Single pulse avalanche energy		E _{AS}	230	mJ
Junction and Storage Temperature Range		T _J , T _{STG}	-55 To 150	°C

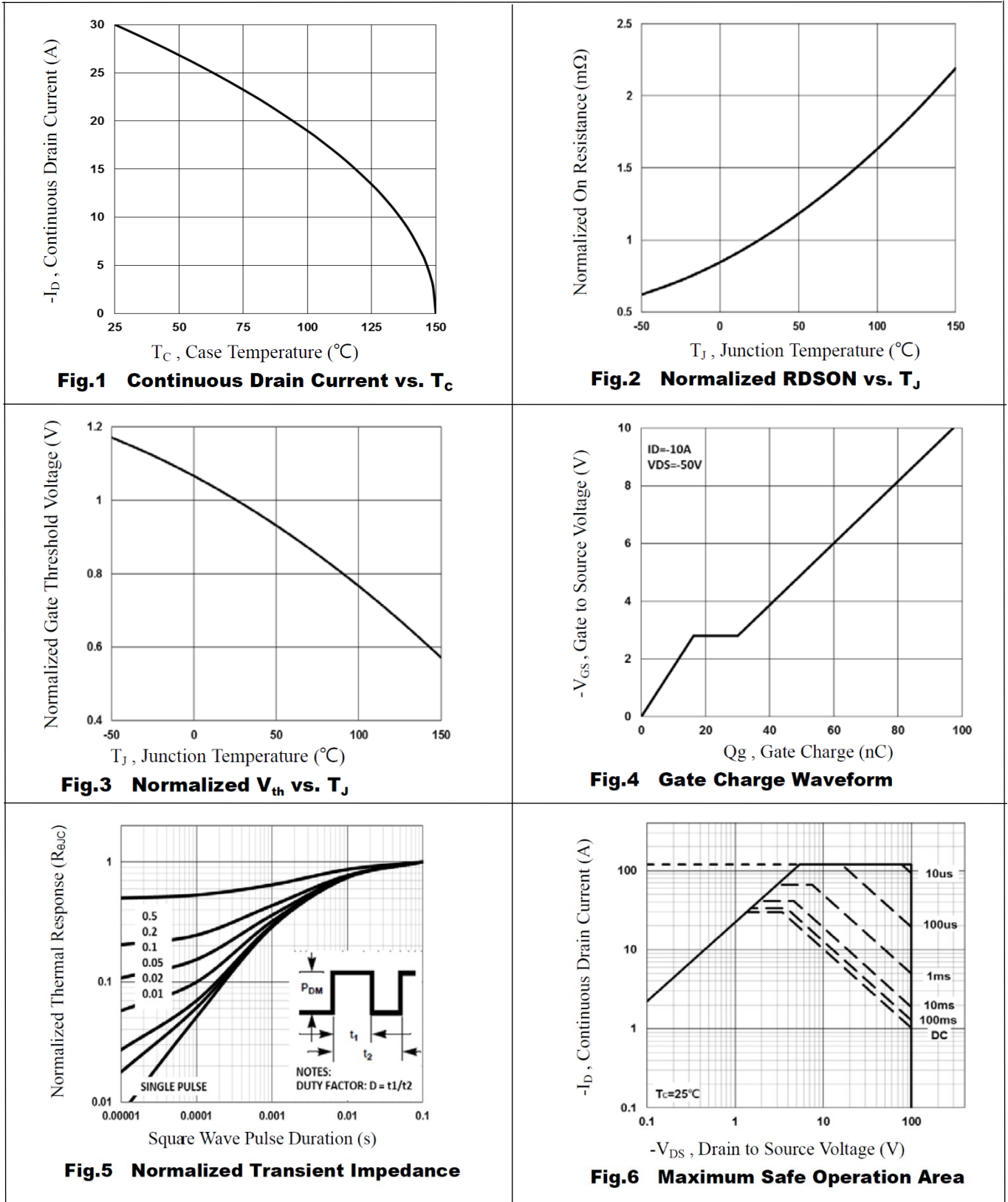
Thermal Characteristics

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance junction-case	R _{θJC}		1.2	°C /W
Thermal Resistance junction-to-Ambient	R _{θJA}		62	°C /W

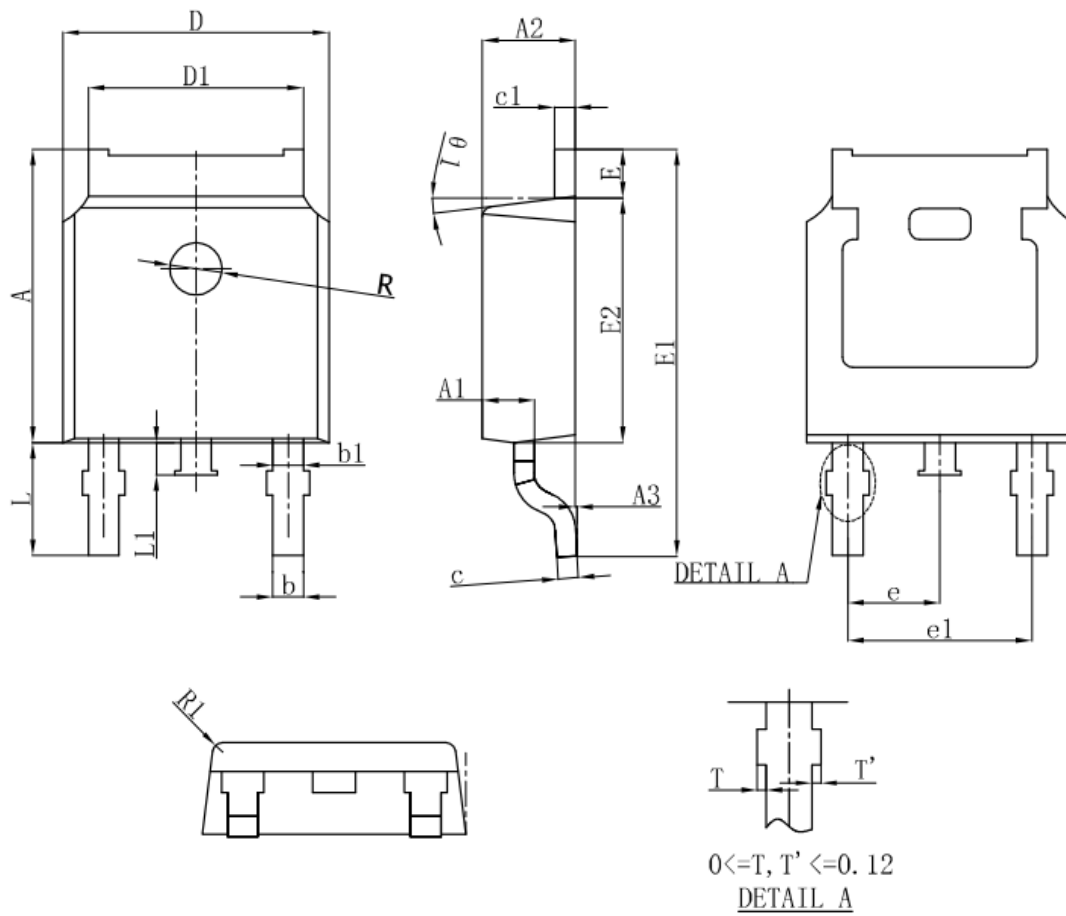
Electrical Characteristics(T_J=25 °C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
STATICPARAMETERS						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-100			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-80V, V_{GS}=0V$			-1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$			-100	nA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.2	-1.8	-2.5	V
$R_{DS(ON)}$	Drain-Source On-State Resistance	$V_{GS}=-10V, I_D=-15A$		31	45	m Ω
		$V_{GS}=-4.5V, I_D=-10A$		41	50	m Ω
gfs	Forward Transconductance	$V_{DS}=-10V, I_D=-5A$		22		S
DYNAMICPARAMETERS						
C_{iss}	Input Capacitance	$V_{DS}=-25V, V_{GS}=0V,$ $F=1.0MHz$		2300		pF
C_{oss}	Output Capacitance			220		pF
C_{rss}	Reverse Transfer Capacitance			50		pF
SWITCHINGPARAMETERS						
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=-50V, I_D=-5A,$ $V_{GS}=-10V, R_G=25\Omega$		58		nS
t_r	Turn-on Rise Time			24		nS
$t_{d(off)}$	Turn-Off Delay Time			215		nS
t_f	Turn-Off Fall Time			94		nS
Q_g	Total Gate Charge	$V_{DS}=-50V, I_D=-10A,$ $V_{GS}=0到-10V$		98		nC
Q_{gs}	Gate-Source Charge			16		nC
Q_{gd}	Gate-Drain Charge			13.5		nC
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_{SD}=-1A$		-0.7	-1.2	V

Electrical Characteristics Diagrams



Package Outline Dimensions



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	7.050	7.100	7.150
A1	0.960	1.010	1.060
A2	2.250	2.300	2.350
A3	0.000	0.050	0.100
b	0.760REF.		
b1	1.000REF.		
c	0.508REF.		
c1	0.508REF.		
D	6.550	6.600	6.650
D1	5.220	5.320	5.420
E	0.950	1.000	1.050
E1	9.700	9.900	10.100
E2	6.050	6.100	6.150
e	2.286BSC		
e1	4.572REF.		
L	2.650	2.800	2.950
L1	0.700	0.800	0.900
0 1	7° REF.		
R	0.250REF.		

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