

N-Channel 80V MOSFET

E080N6P5CL1

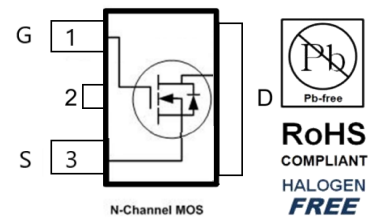
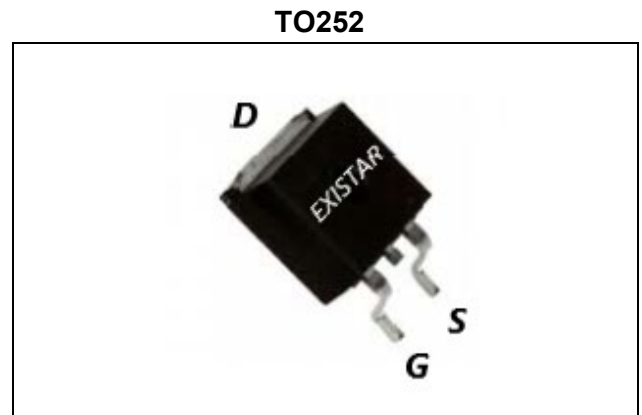
V_{DS} (V)	$R_{DS(on),max}$ (m Ω)	I_D (A)
80V	6.5@ $V_{GS} = 10V$	70

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



Package And Ordering Information

Ordering code	Package	Marking
E080N6P5CL1	TO252	E080N6P5CL1

Ordering Information

Package	Units/ Reel	Reels/ Inner Box	Units/ Inner Box
TO252	2500	2	5000

Key Performance Parameters

Parameter	Value	Unit
VDS, min @ Tj(max)	80	V
ID, pulse	275	A
RDS(ON), max @ VGS=10V	6.5	mΩ
Qg	41.7	nC

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

Parameter	Symbol	Limit	Unit
Drain-source voltage	V _{DS}	80	V
Gate-source voltage	V _{GS}	±20	
Continuous drain current	I _D	T _C =25°C	70
		T _C =100°C	45
Pulsed drain current	I _{D,pulse}	275	A
Avalanche energy, single pulse	E _{AS}	20	mJ
Power dissipation	P _D	T _C =25°C	57.6
		T _A =25°C	-
Operating junction and storage temperature range	T _J , T _{stg}	-55 to 150	°C

Thermal Characteristics

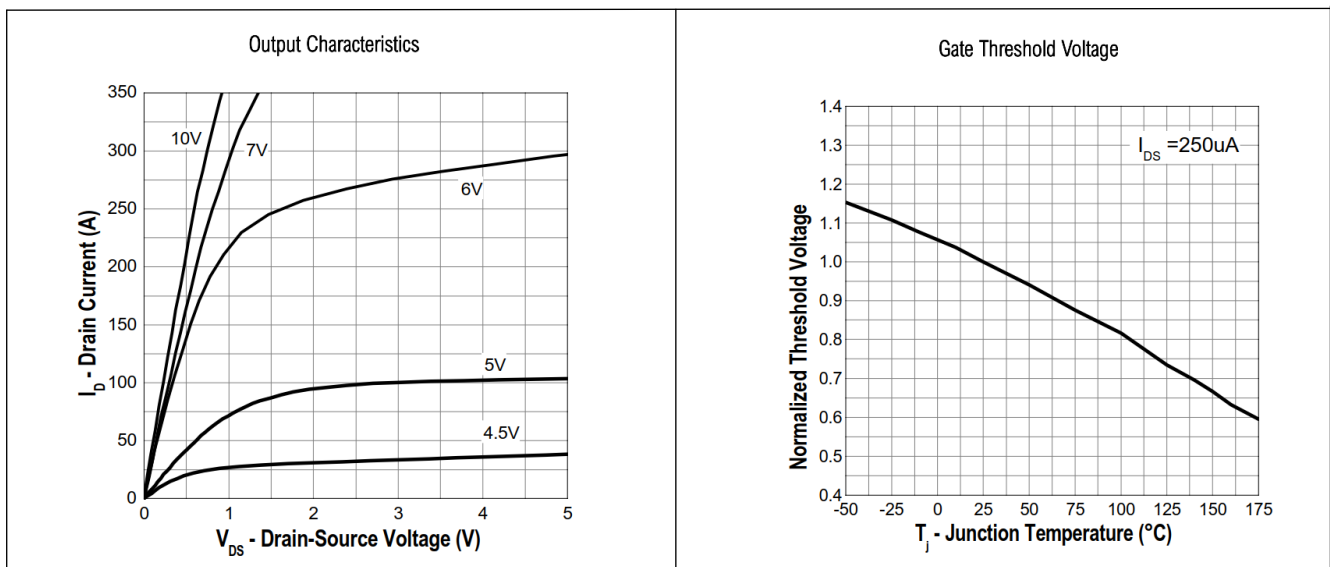
Parameter	Symbol	Max.	Unit
Thermal resistance, junction-to-case	R _{θJC}	2.2	°C/W
Thermal resistance, junction-to-ambient	R _{θJA}	62	

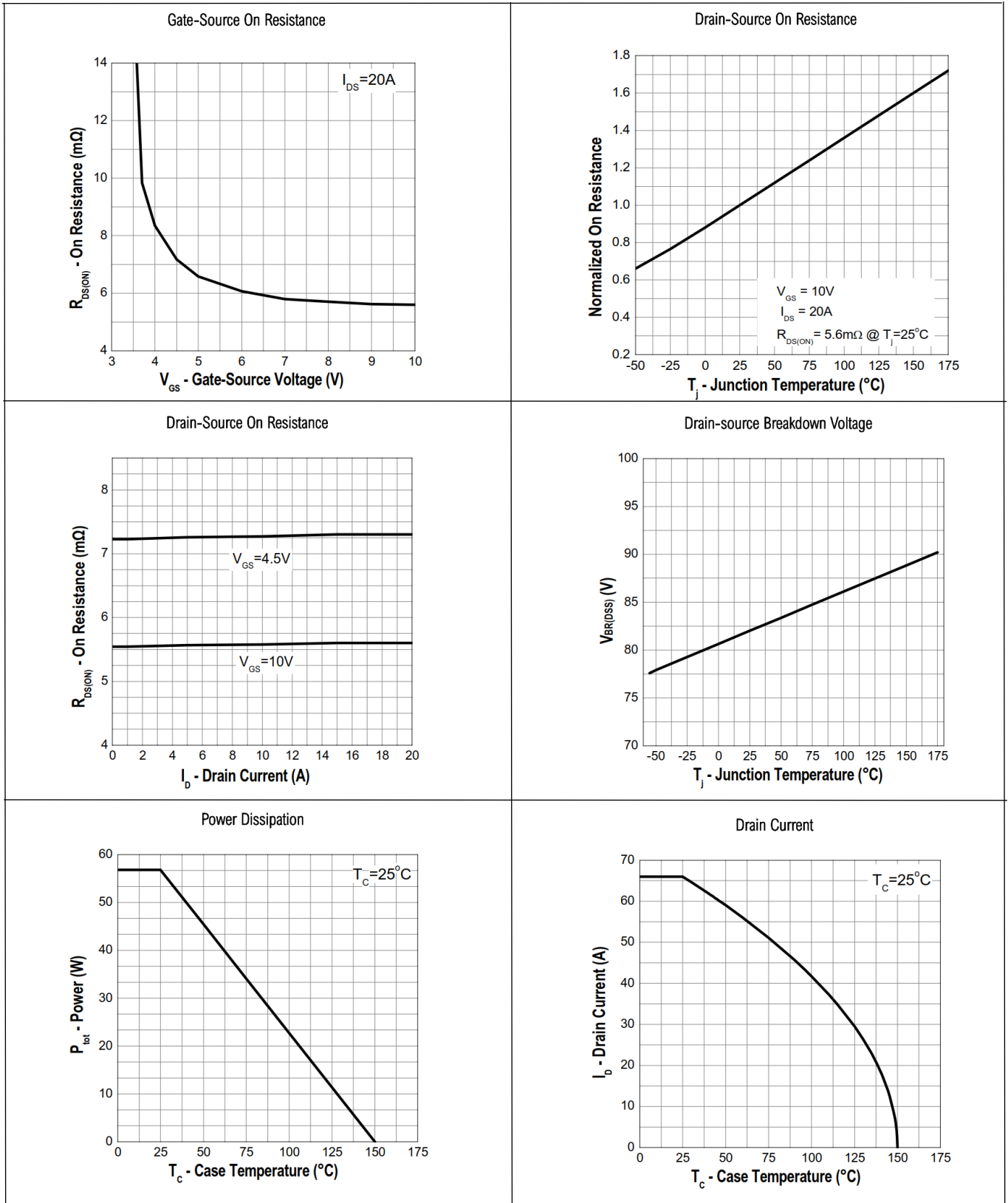
Electrical Characteristics at Tj=25°C unless otherwise specified

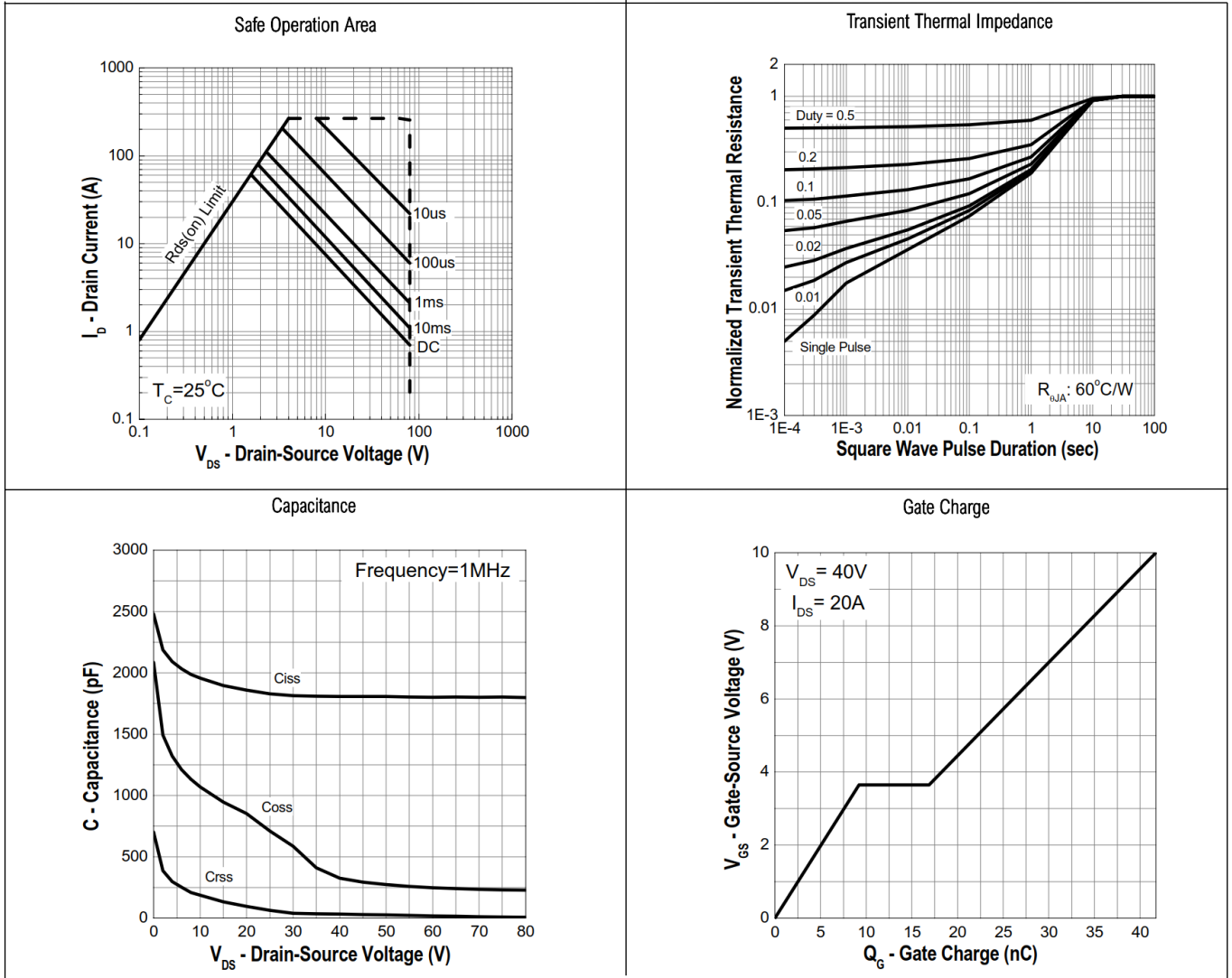
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Static						
Drain to source breakdown voltage	V _{(BR)DSS}	80			V	V _{GS} = 0, I _D = 250 μA
Gate-source threshold voltage	V _{GS(th)}	1.2	1.8	2.5	V	V _{DS} = V _{GS} , I _D = 250 μA
Gate-body leakage	I _{GSS}			±100	nA	V _{DS} = 0 V, V _{GS} = ±20 V
Zero gate voltage drain current	I _{DSS}			1	μA	V _{DS} = 64 V, V _{GS} = 0 V
Drain-source on-resistance	R _{DS(on)}		5.3	6.5	mΩ	V _{GS} = 10 V, I _D = 20 A
Drain-source on-resistance	R _{DS(on)}		7.8	8.8	mΩ	V _{GS} = 4.5 V, I _D = 15 A

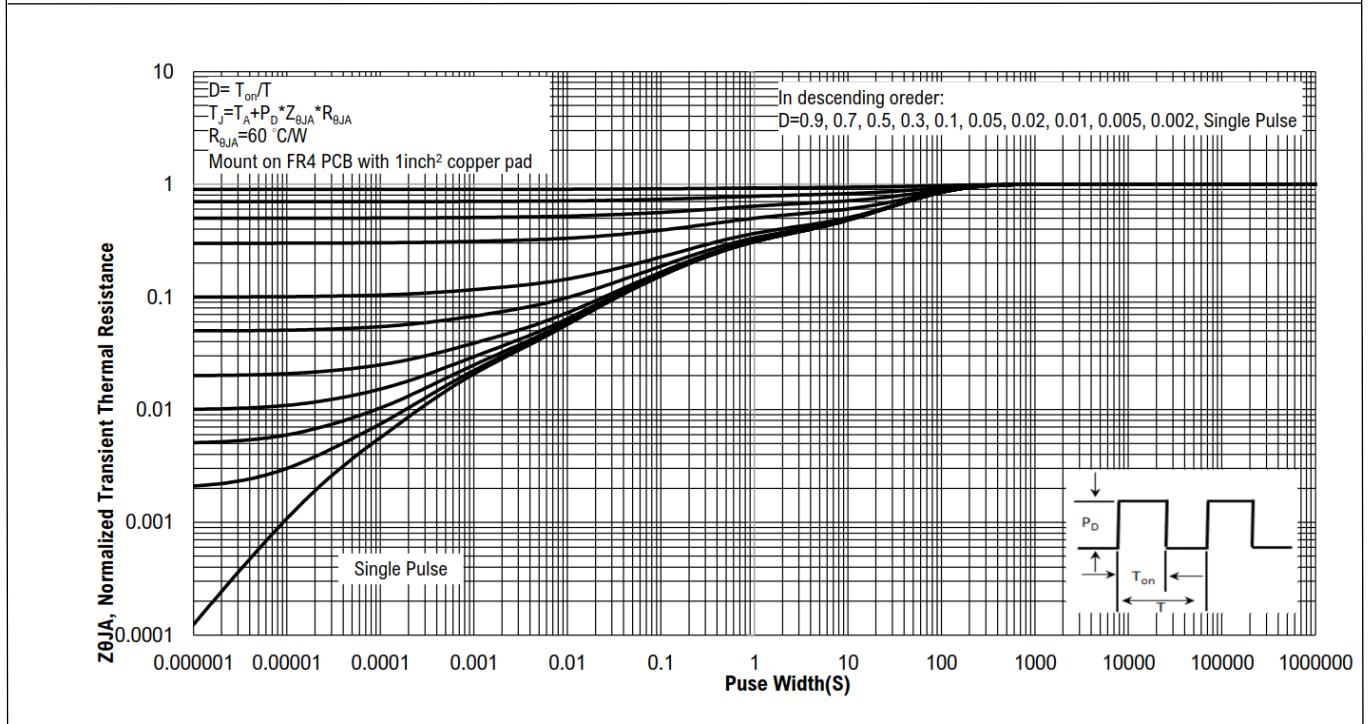
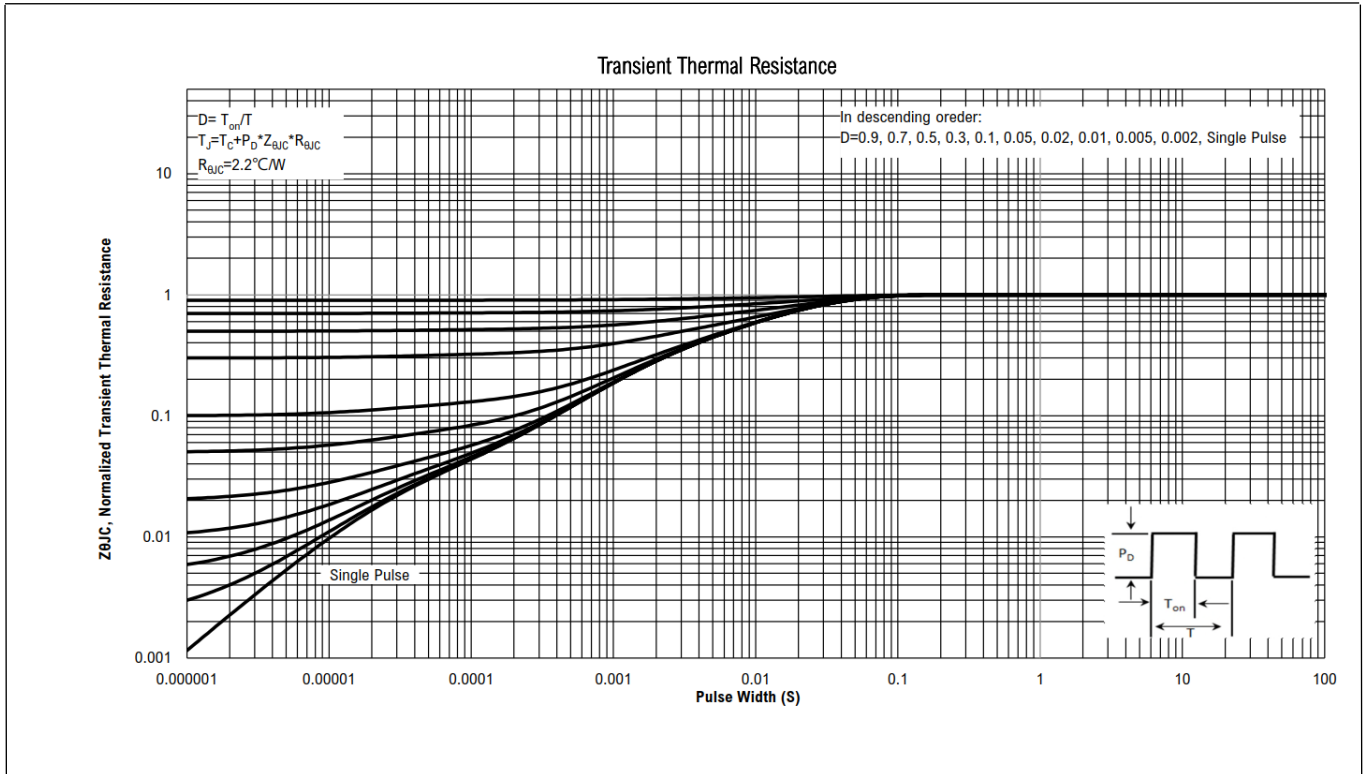
Forward transconductance	g_{fs}				S	$V_{DS} = 5\text{ V}, I_D = 20\text{ A}$
Gate resistance	R_g		0.7		Ω	$f = 1\text{ MHz}$
Gate Charge						
Total gate charge	Q_g		41.7		nC	$V_{DS} = 40\text{ V}, I_D = 20\text{ A}, V_{GS} = 10\text{ V}$
Gate-source charge	Q_{gs}		9.2			
Gate-drain charge	Q_{gd}		7.7			
Dynamic						
Turn-on delay time	$t_{d(on)}$		8.4		ns	$V_{DS} = 40\text{ V}, I_D = 20\text{ A}, V_{GS} = 10\text{ V}, R_{GEN} = 3.6\ \Omega$
Rise time	t_r		21			
Turn-off delay time	$t_{d(off)}$		29			
Fall time	t_f		45			
Input capacitance	C_{iss}		1721		pF	$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}, f = 1\text{ MHz}$
Output capacitance	C_{oss}		812			
Reverse transfer capacitance	C_{rss}		47			
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}		25		ns	$V_R = 30\text{ V}, I_S = 20\text{ A}, di/dt = 200\text{ A}/\mu\text{s}$
Reverse recovery charge	Q_{rr}		45		nC	

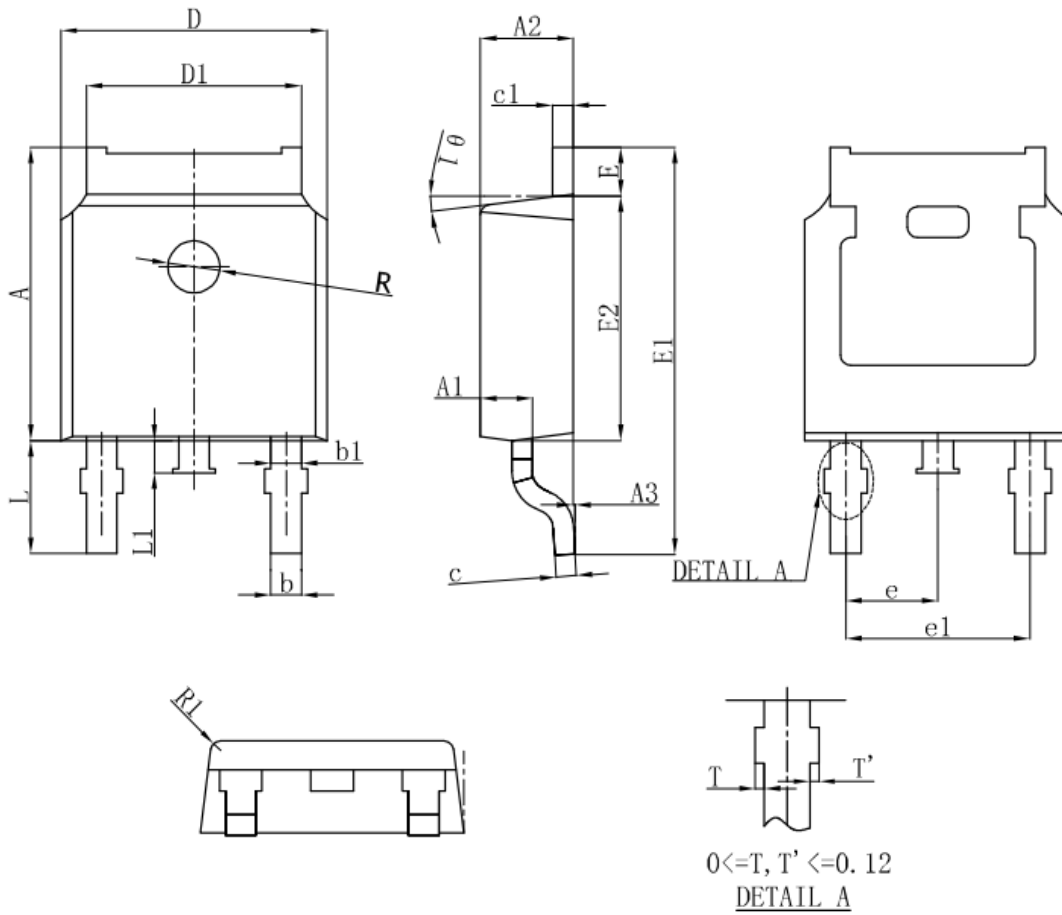
Electrical Characteristics Diagrams









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
θ	7° REF.		
R	0.250REF.		

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