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TPM6061PK3

P-Channel 60-V (D-S) MOSFET

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FEATURES

- $R_{DS(ON)}$ 17mΩ@V_{GS}=-10V (Typ)
- $R_{DS(ON)}$ 20mΩ@V_{GS}=-4.5V(Typ)
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

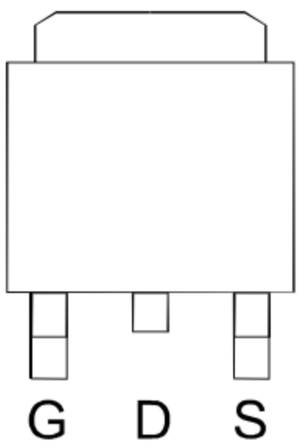
APPLICATIONS

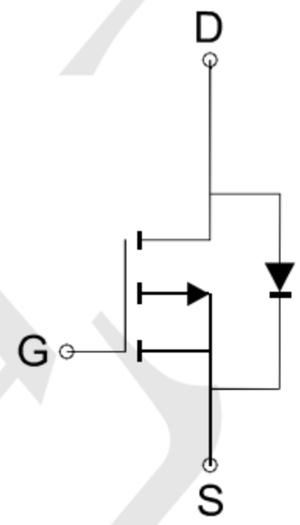
- Power Management in Note book
- DC/DC Converter
- Load Switch
- LCD Display inverter

Package and Pin Configuration

(TO-252-3L)

Top View





P-Channel MOSFET

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

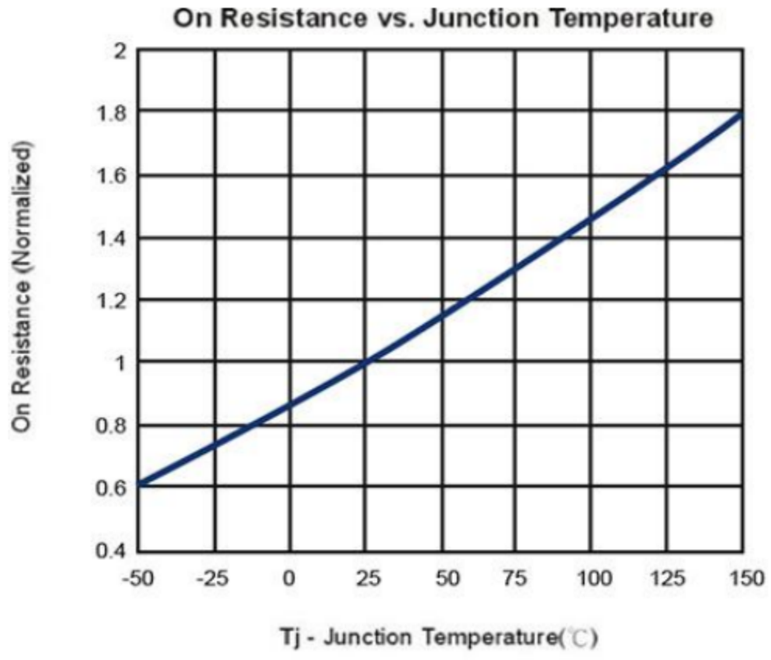
Parameter		Symbol	Maximum Ratings	Unit
Drain-Source Voltage		V_{DS}	-60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current*	Tc=25℃	I_D	-61	A
	Tc=70℃		-49	
Pulsed Drain Current		I_{DM}	-244	A
Maximum Power Dissipation*	Tc=25℃	P_D	114	W
	Tc=70℃		73	
Operating Junction Temperature		T_J	-55 to 150	℃
Thermal Resistance-Junction to Case*		$R_{\theta JC}$	1.1	℃/W

Electrical Characteristics (Tj=25℃unless otherwise noted)

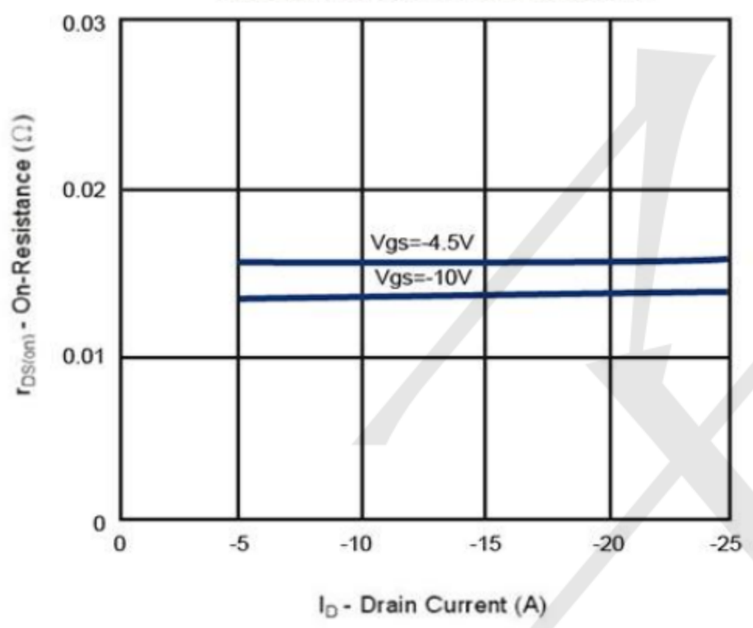
Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=-250 μA	-60			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250 μA	-1		-3	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±20V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-60V, V_{GS}=0V			-1	μA
$R_{DS(ON)}$	Drain-Source On-State Resistance[a]	V_{GS}=-10V, I_D= -17A		14	17	mΩ
		V_{GS}=-4.5V, I_D= -14A		16	20	
V_{SD}	Diode Forward Voltage	I_S=-17A, V_{GS}=0V		-0.9	-1.2	V
DYNAMIC						
Qg	Total Gate Charge(10V)	V_{DS}=-30V, V_{GS}=-10V, I_D=-50A		94		nC
Qg	Total Gate Charge(4.5V)	V_{DS}=-30V, V_{GS}=-4.5V, I_D=-50A		46		
Qgs	Gate-Source Charge			18		
Qgd	Gate-Drain Charge			24		
Ciss	Input capacitance	V_{DS}=-15V, V_{GS}=0V, F=1MHz		4707		pF
Coss	Output Capacitance			373		
Crss	Reverse Transfer Capacitance			336		
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=-30V, R_L =30Ω V_{GEN}=-10V, R_G=6Ω		53		ns
tr	Turn-On Rise Time			19		
$t_{d(off)}$	Turn-Off Delay Time			221		
t_f	Turn-Off Fall Time			61		

Typical Electrical and Thermal Characteristics

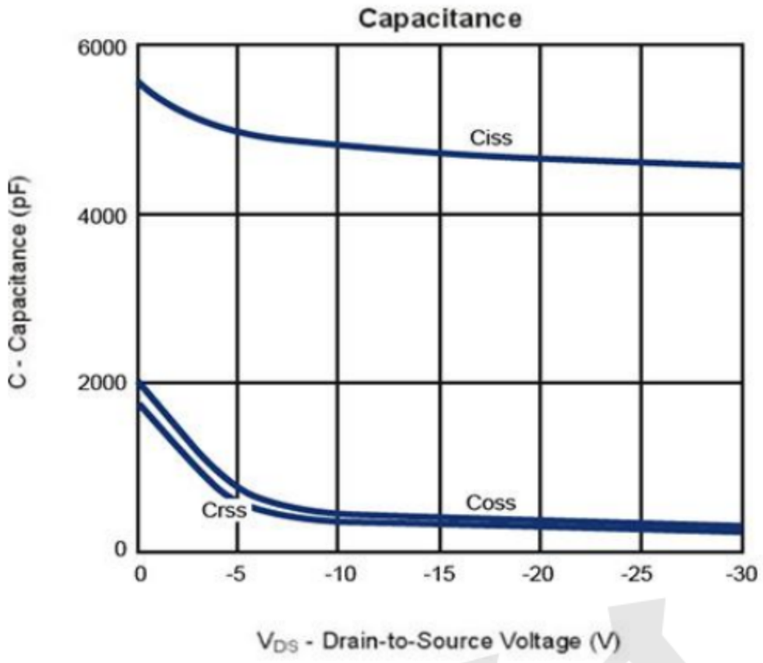
On Resistance vs. Junction Temperature



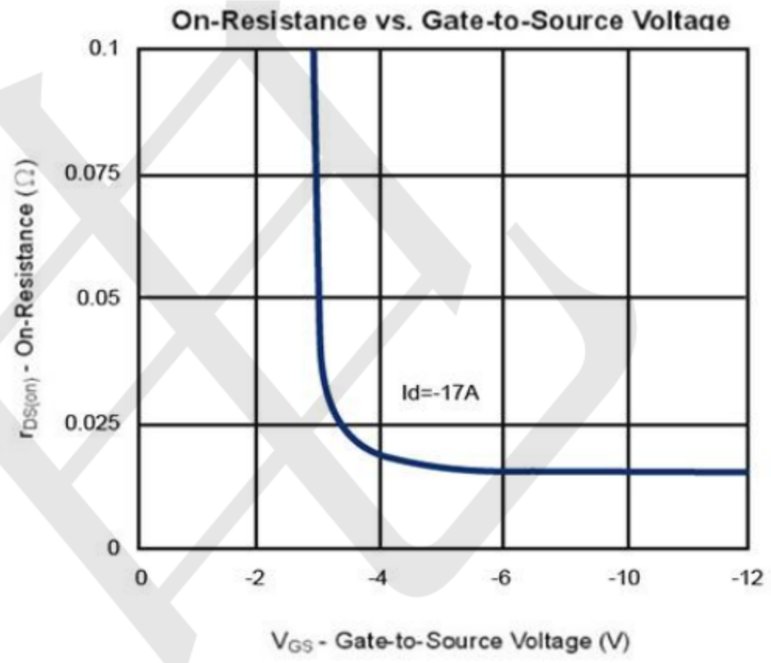
On-Resistance vs. Drain Current



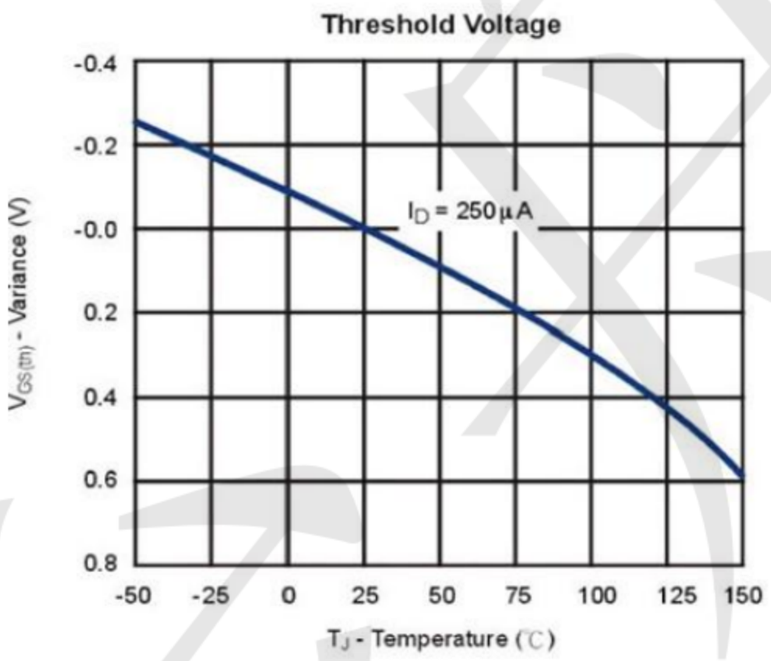
Capacitance



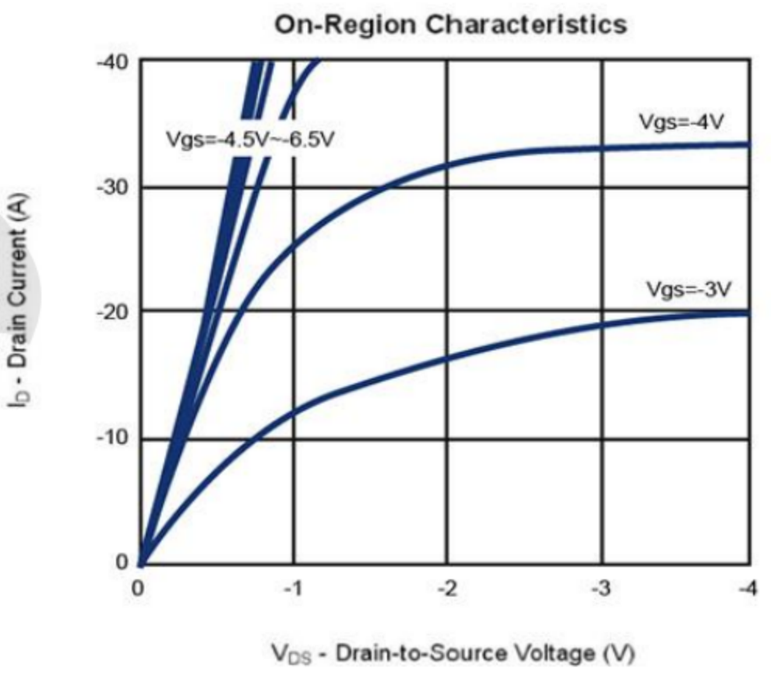
On-Resistance vs. Gate-to-Source Voltage



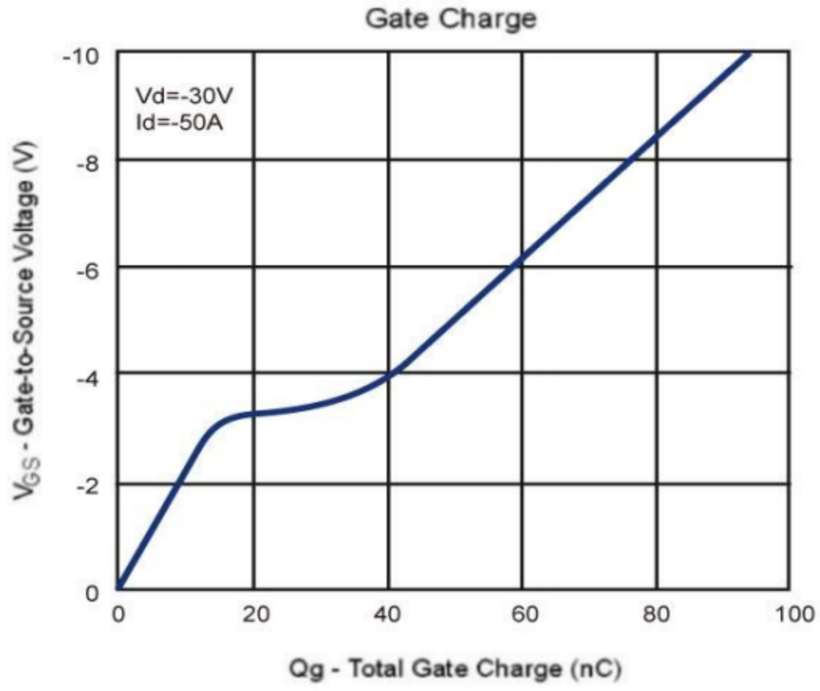
Threshold Voltage



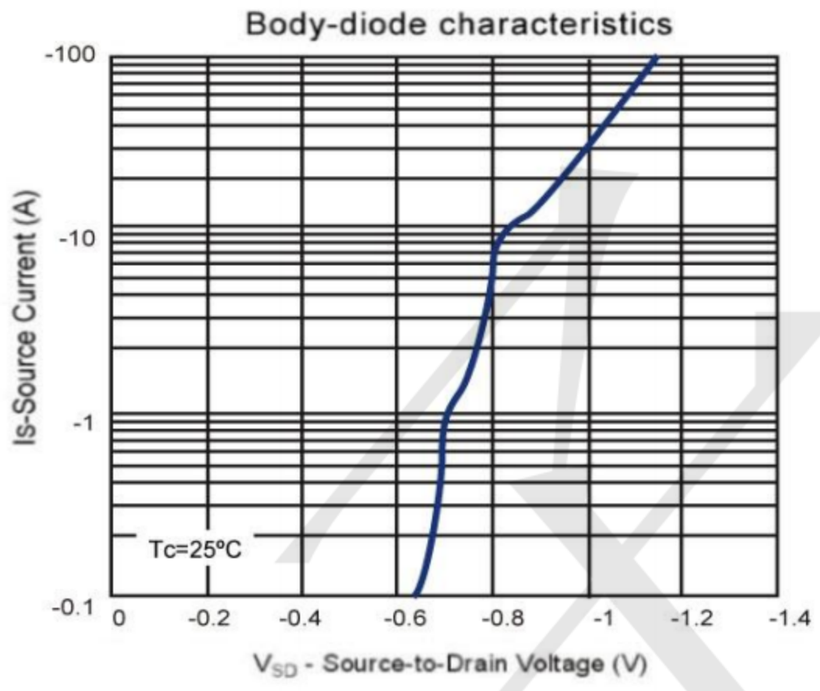
On-Region Characteristics



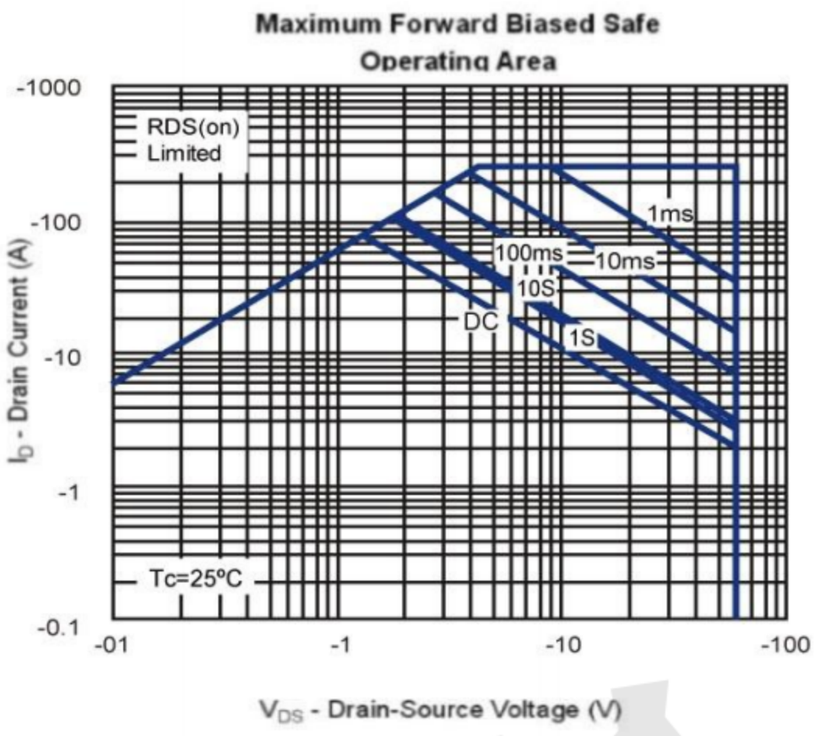
Gate Charge



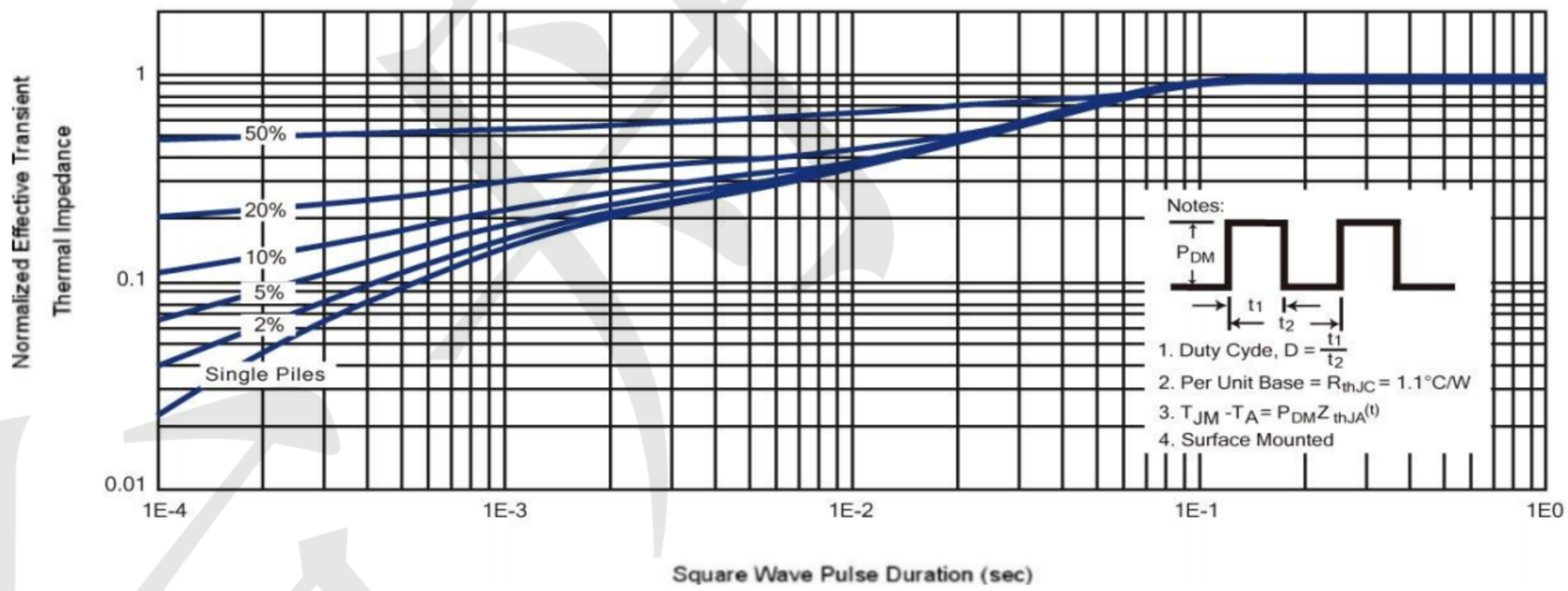
Body-diode characteristics



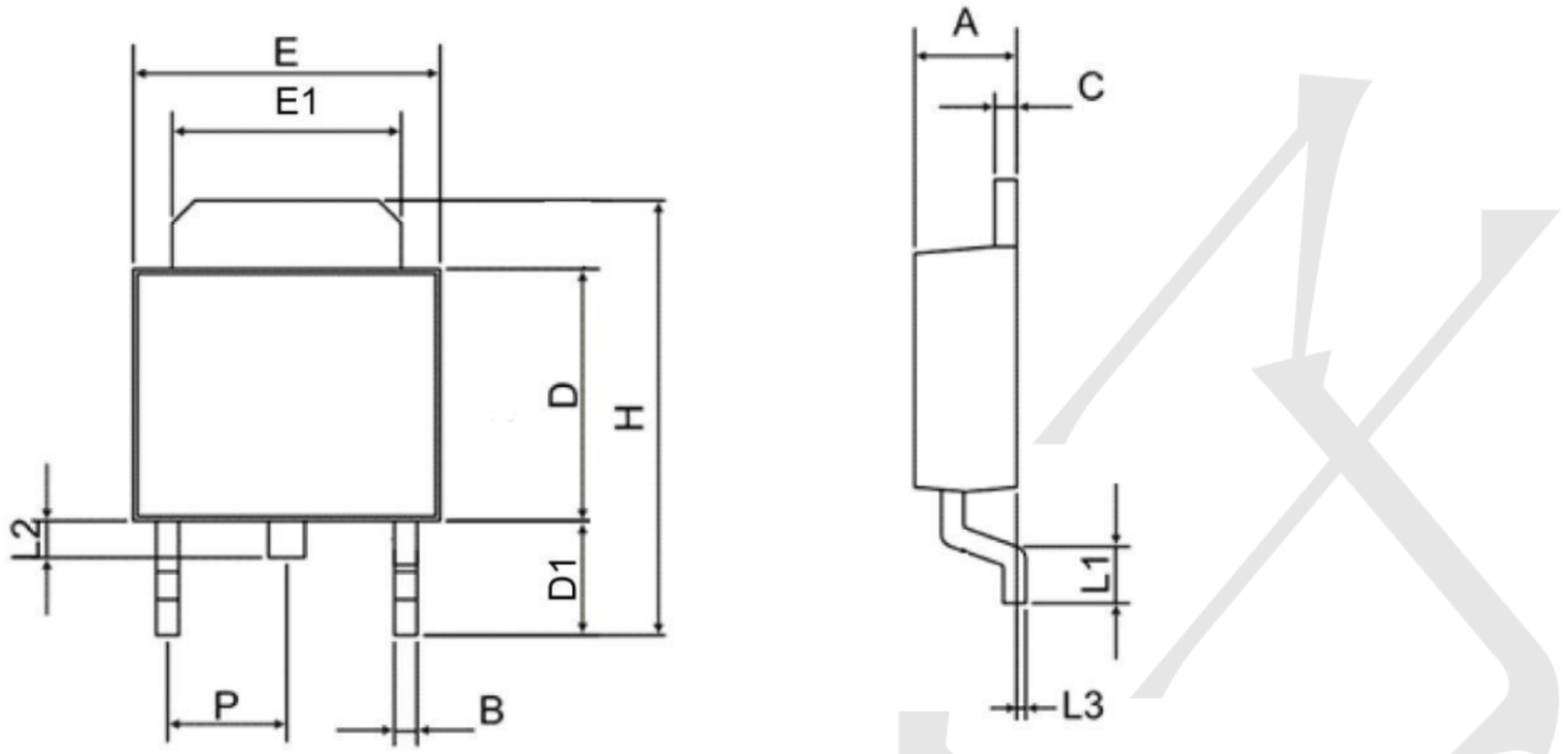
Maximum Forward Biased Safe Operating Area

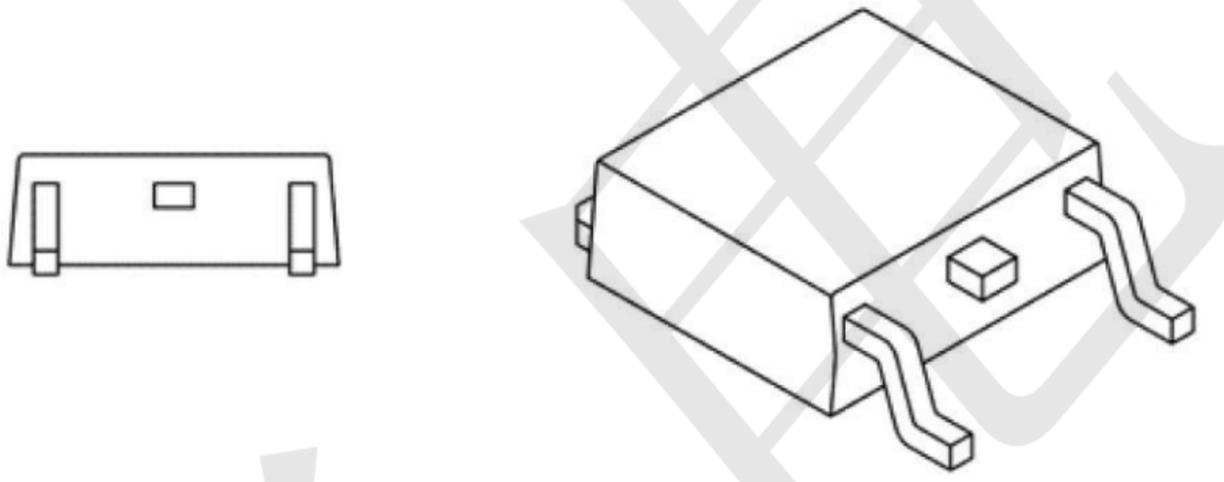


Normalized Thermal Transient Impedance, Junction-to-Case



TO252-2L Package Information





SYMBOL	MIN	MAX
A	2.10	2.50
B	0.40	0.90
C	0.40	0.90
D	5.30	6.30
D1	2.20	2.90
E	6.30	6.75
E1	4.80	5.50
L1	0.90	1.80
L2	0.50	1.10
L3	0.00	0.20
H	8.90	10.40
P	2.30 BSC	

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