

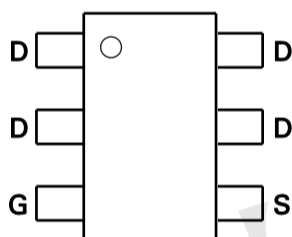
Product Summary

- 60V/ 5A
 $R_{DS(ON)} = 25m\Omega (Typ) @ V_{GS} = -10V$
 $R_{DS(ON)} = 30m\Omega (Typ) @ V_{GS} = -4.5V$
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

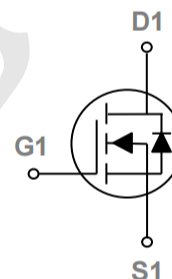
Application

- DC-DC Converters.
- Load Switch.
- Power Management.

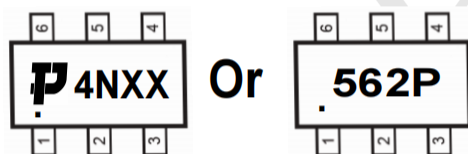
Package and Pin Configuration



Circuit diagram



Marking:



- “P” is TECHPUBLIC LOGO
- “4N” is Part Number, fixed
- “xx” is internal code

Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

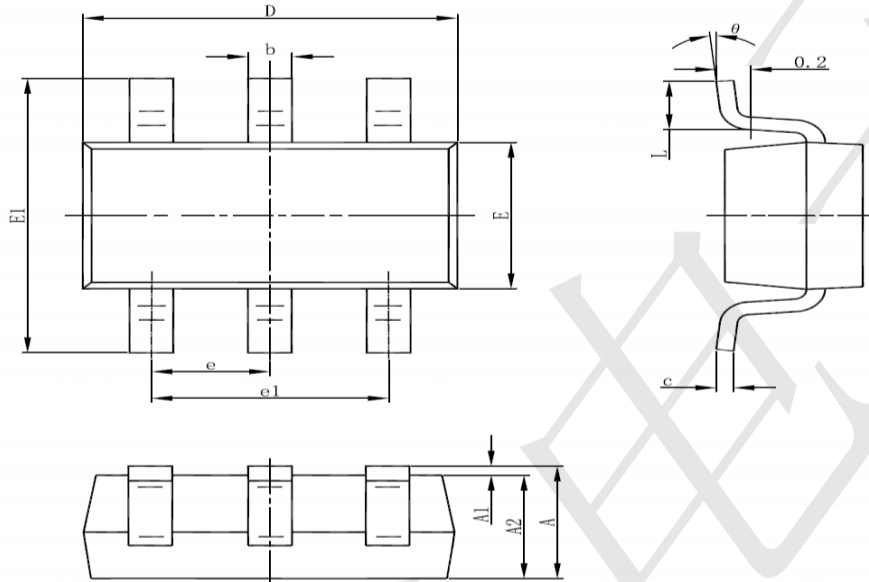
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	5	A
Pulsed Drain Current (note 1)	I_{DM}	30	A
Power Dissipation	P_D	1.7	A
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	106	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{STG}	-55~+150	$^\circ C$

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	60			V
Gate-Threshold Voltage ^(Note3)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0		3.0	V
Gate-Body Leakage Current	I _{GSS}	V _{GS} =± 20V, V _{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
Drain-Source On-Resistance ^(Note3)	R _{DS(on)}	V _{GS} =10V, I _D =3A		25	29	mΩ
		V _{GS} =4.5V, I _D =3A		30	35	
Forward Transconductance ^(Note3)	g _{fs}	V _{DS} =5V, I _D =4.5A	11			S
Dynamic Characteristics^(Note4)						
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f=1MHz		500		pF
Output Capacitance	C _{oss}			60		
Reverse Transfer Capacitance	C _{rss}			25		
Switching Characteristics^(Note4)						
Total Gate Charge	Q _g	V _{DS} =48V, V _{GS} =10V, I _D =15A		12		nC
Gate-Source Charge	Q _{gs}			4.1		
Gate-Drain Charge	Q _{gd}			4.5		
Turn-on Delay Time	t _{d(on)}	V _{DD} =30V, V _{GS} =10V, I _D =2A, R _G =3Ω, R _L =6.7Ω		5.0		ns
Turn-on Rise Time	t _r			2.6		
Turn-off Delay Time	t _{d(off)}			16.1		
Turn-off Fall Time	t _f			2.3		
Drain-Source Diode Characteristics						
Diode Forward Voltage ^(Note3)	V _{SD}	V _{GS} =0V, I _s =20A			1.2	V
Diode Forward Current ^(Note2)	I _s				20	A
Reverse Recovery Time	t _{rr}	I _F =20A, di/dt=100A/μs ^(Note4)		35		nS
Reverse Recovery Charge	Q _{rr}				53	
Forward Turn-On Time	t _{on}	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				



SOT23-6 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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