

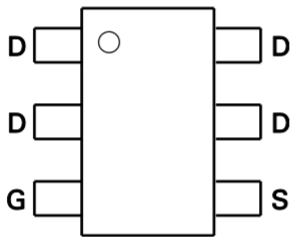
General Features

- $V_{DS} = 20V, I_D = 7A$
- $R_{DS(ON)} = 23m\Omega \text{ typ @ } V_{GS}=2.5V$
- $R_{DS(ON)} = 28m\Omega \text{ typ @ } V_{GS}=4.5V$

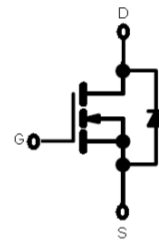
Application

- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable
- Logic Level Shift

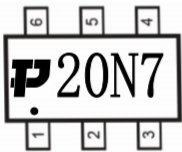
Package and Pin Configuration



Circuit diagram



Marking:



“P” is TECHPUBLIC LOGO
“20N7” Marking ID

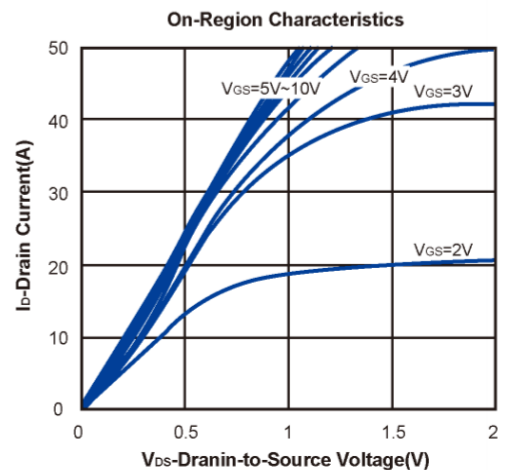
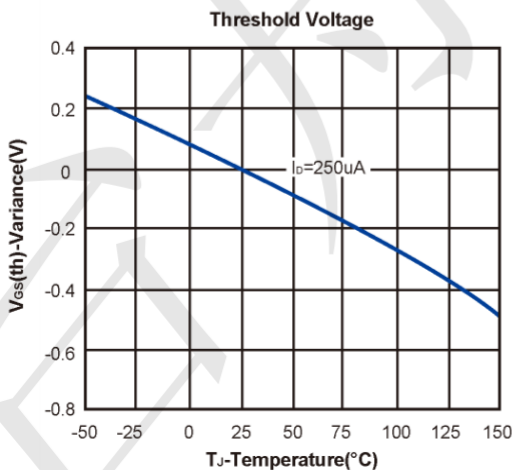
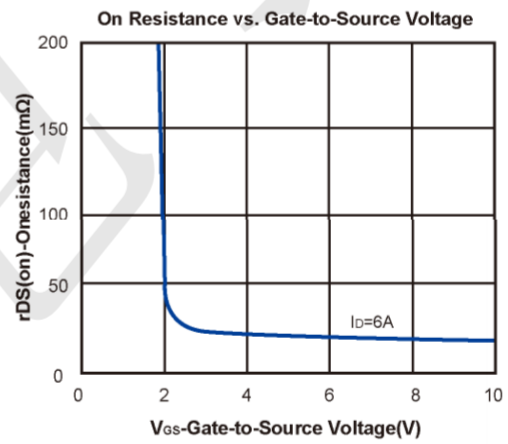
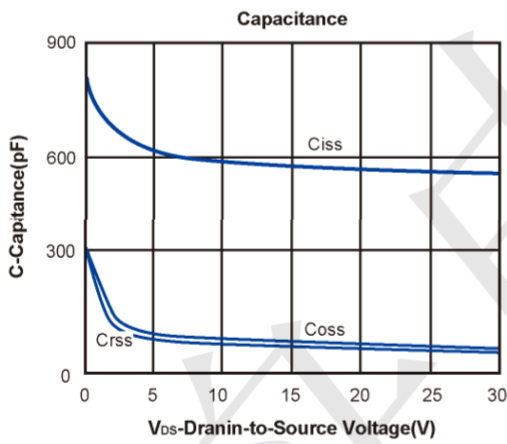
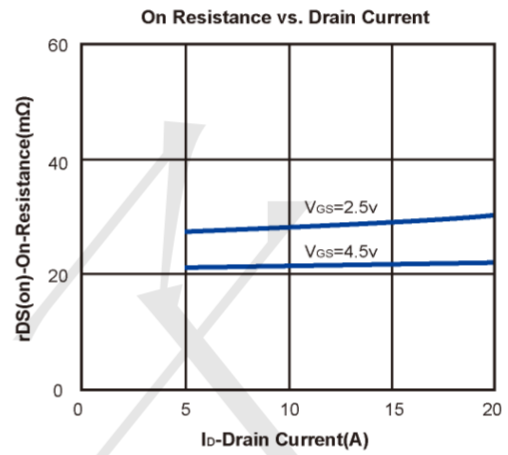
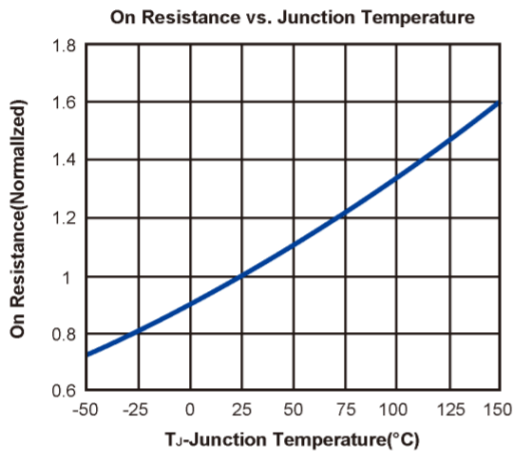
Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current	I_D	7	A
Pulsed Drain Current	I_{DM}	20	
Power Dissipation	P_D	2.0	W
Thermal Resistance from Junction to Ambient ($t \leq 5s$)	$R_{\theta JA}$	62.5	$^\circ C/W$
Operating Junction	T_J	150	$^\circ C$
Storage Temperature	T_{STG}	-55 ~ +150	

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

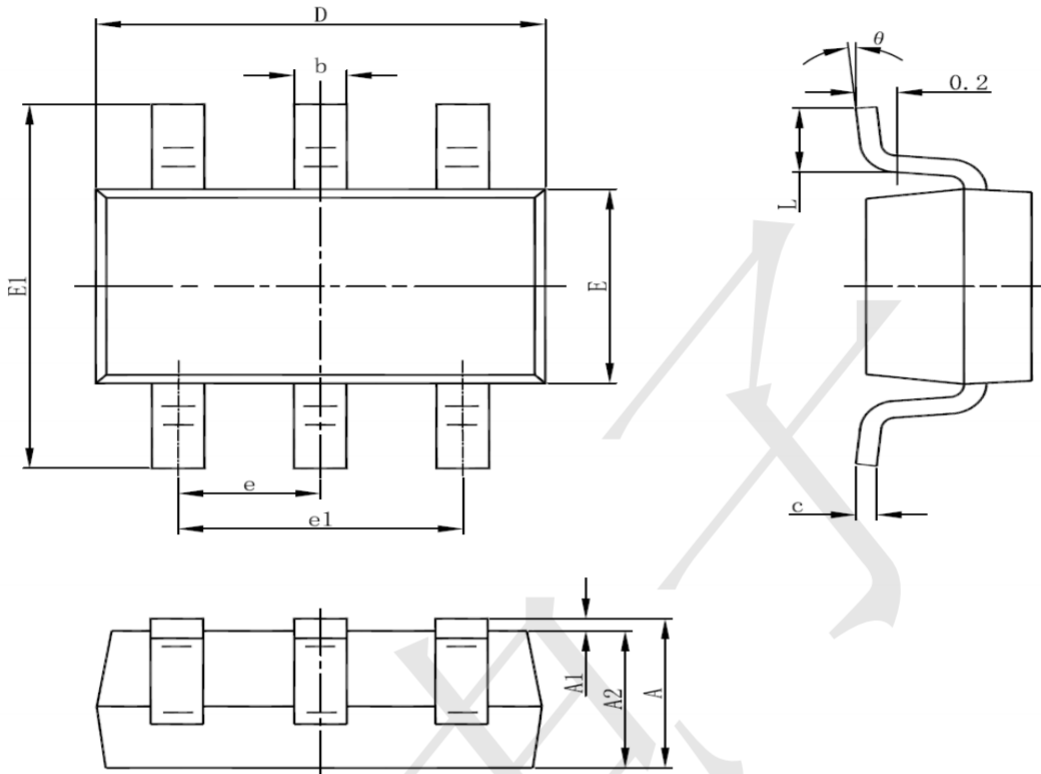
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 10μA	20			V
Gate-threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 50μA	0.40		1	
Gate-body leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V			1	μA
Drain-source on-resistance ^a	r _{DS(on)}	V _{GS} = 4.5V, I _D = 6A		0.023	0.028	Ω
		V _{GS} = 2.5V, I _D = 5.2A		0.028	0.035	
Forward transconductance ^a	g _{fs}	V _{DS} = 5V, I _D = 3.6A		8		S
Diode forward voltage	V _{SD}	I _S = 0.94A, V _{GS} = 0V		0.74	1.2	V
Dynamic						
Total gate charge	Q _g	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 3.6A		7.7	10	nC
Gate-source charge	Q _{gs}			0.32		
Gate-drain charge	Q _{gd}			2.1		
Input capacitance ^b	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		1310		pF
Output capacitance ^b	C _{oss}			140		
Reverse transfer capacitance ^b	C _{rss}			60		
Switching^b						
Turn-on delay time	t _{d(on)}	V _{DD} = 10V, R _L = 5.5Ω, I _D ≈ 3.6A, V _{GEN} = 4.5V, R _g = 6Ω		78.7		ns
Rise time	t _r			128		
Turn-off delay time	t _{d(off)}			453		
Fall time	t _f			80.9		

Typical Electrical and Thermal Characteristics





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°