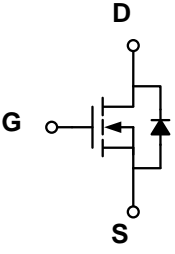
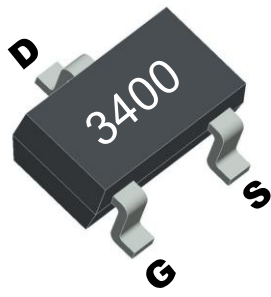



30V N-Channel Enhancement Mode MOSFET

<p>Schematic diagram</p>  <p>Marking and pin assignment</p> <p style="text-align: center;">SOT-23 (TOP VIEW)</p> 	<p>Description</p> <p>The PECN3400AVR uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and high density cell Design for ultra low on-resistance. This device is suitable for use as a load switch or in PWM applications.</p> <p>General Features</p> <ul style="list-style-type: none"> ◆ $V_{DS} = 30V$, $I_D = 5.8A$ $R_{DS(ON)}(Typ.) = 26m\Omega$ @ $V_{GS} = 4.5V$ $R_{DS(ON)}(Typ.) = 33m\Omega$ @ $V_{GS} = 2.5V$ ◆ High power and current handling capability ◆ Lead free product is acquired ◆ Surface mount package <p>Application</p> <ul style="list-style-type: none"> ◆ PWM applications ◆ Load switch <p>Package</p> <ul style="list-style-type: none"> ◆ SOT-23 <div style="text-align: right; margin-top: 10px;">  </div>
--	--

Ordering Information

Part Number	Storage Temperature	Package	Devices Per Reel
PECN3400AVR	-55°C to +150°C	SOT-23	3000

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

parameter	symbol	limit	unit
Drain-source voltage	V_{DS}	30	V
Gate-source voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	25°C	5.8
		100°C	5
Plused Drain Current	I_{DM}	28	A
Avalanche energy ^A	E_{AS}	18	mJ
Power Dissipation ^B	P_D	25°C	1.4
		100°C	0.6
Operating junction Temperature range	T_j	-55-150	°C

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	-	-	1	μA
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$	-	-	± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.8	1.3	V
Drain-source on-state resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=6A$	-	26	30	m Ω
		$V_{GS}=2.5V, I_D=5A$	-	33	35	
Forward Transconductance	g_{FS}	$V_{DS}=15V, I_D=6A$	-	33	-	S
Diode Characteristics						
Diode Forward Voltage	V_{SD}	$I_{SD}= 2A, V_{GS}=0V$	-	0.7	1	V
Diode Continuous Forward Current	I_S		-	-	6	A
Reverse Recovery Time	t_{rr}	$T_J = 25^\circ C, I_F = I_S,$ $di/dt = 100A/\mu s$	-	8.5	-	ns
Reverse Recovery Charge	Q_{rr}		-	2.6	-	nC
Dynamic Characteristics						
Gate Resistance	R_G	$V_{GS}=0V, V_{DS}=0V, f=1MHz$	-	-	5	Ω
Input capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=15V$ $f=1.0MHz$	-	519	-	pF
Output capacitance	C_{OSS}		-	45	-	
Reverse transfer capacitance	C_{RSS}		-	38	-	
Turn-on delay time	$t_{D(ON)}$	$V_{GS}=5V, V_{DS}=15V, R_L=1.5\Omega,$ $R_G=3\Omega$	-	3	-	ns
Turn-on Rise time	t_r		-	2.5	-	
Turn-off delay time	$t_{D(OFF)}$		-	25	-	
Turn-off Fall time	t_f		-	4	-	
Total gate charge	Q_g	$V_{GS}=5V, V_{DS}=15V, I_D=6A$	-	11	-	nC
Gate-source charge	Q_{gs}		-	1	-	
Gate-drain charge	Q_{gd}		-	1.2	-	

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^B	$R_{\theta JA}$	90	$^\circ C/W$
--	-----------------	----	--------------

- A. E_{AS} Condition: ($T_J=25^\circ C, V_{DD}=30V, V_G=10V, L=0.5mH, R_g=25\Omega$)
- B. The power dissipation P_D is based on $T_{J(MAX)}=150^\circ C$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heatsinking is used.
- C. Surface Mounted on FR4 Board, $t \leq 10$ sec.

Typical Performance Characteristics

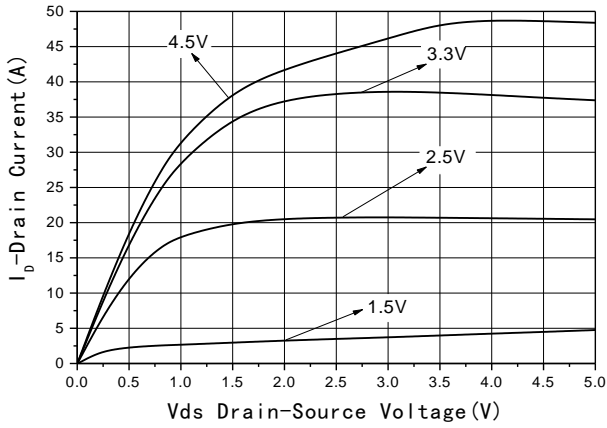


Fig1 Output Characteristics

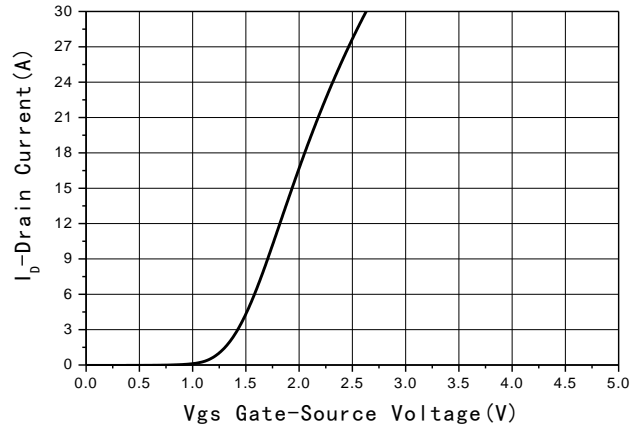


Fig2 Transfer Characteristics

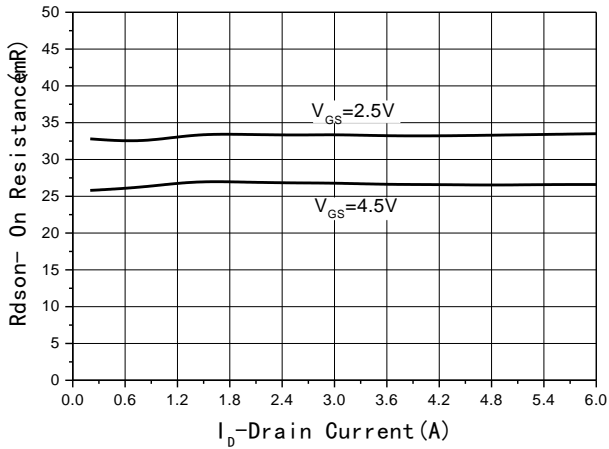


Fig3 Rds(on)-Drain current

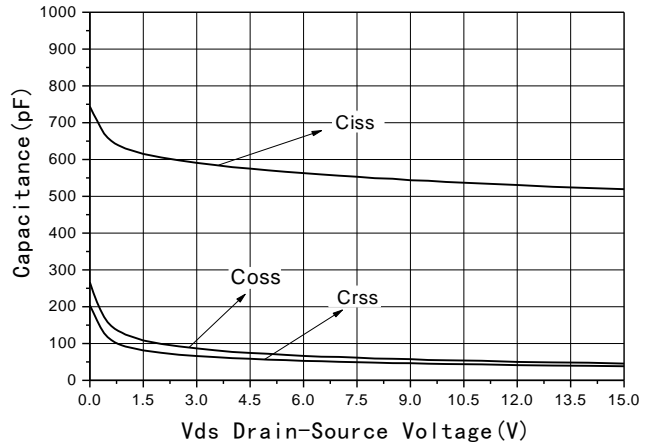


Fig4 Capacitance vs Vds

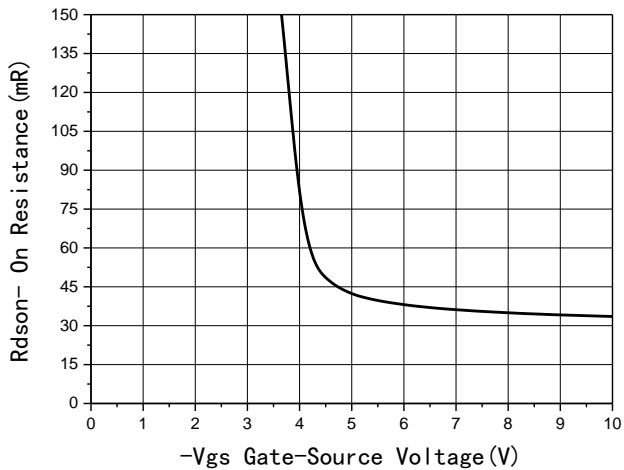


Fig5 Rds(on)-Gate Drain voltage

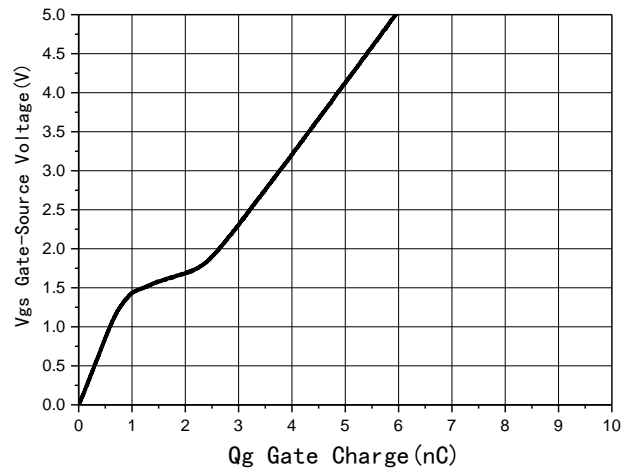


Fig6 Gate Charge

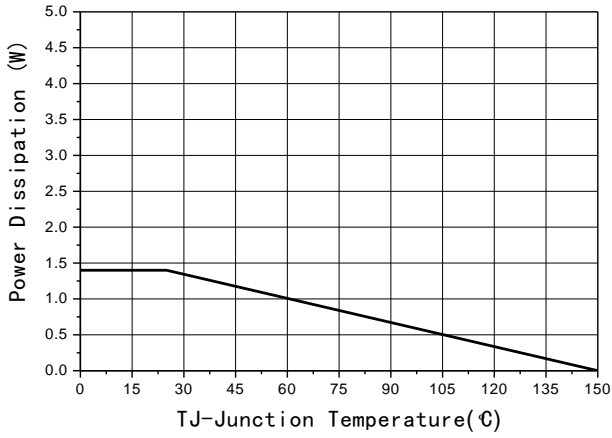


Fig7 Power De-rating

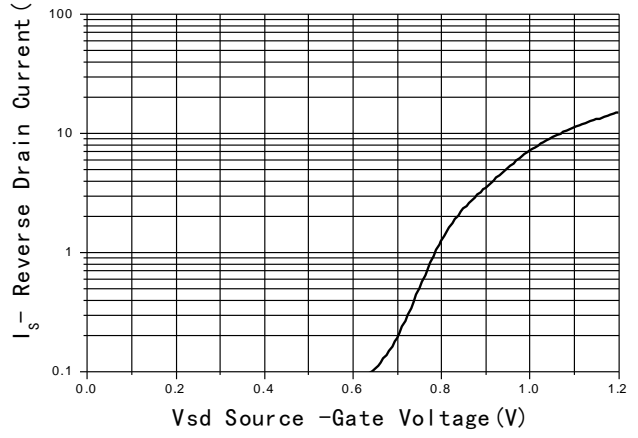


Fig8 Source-Drain Diode Forward

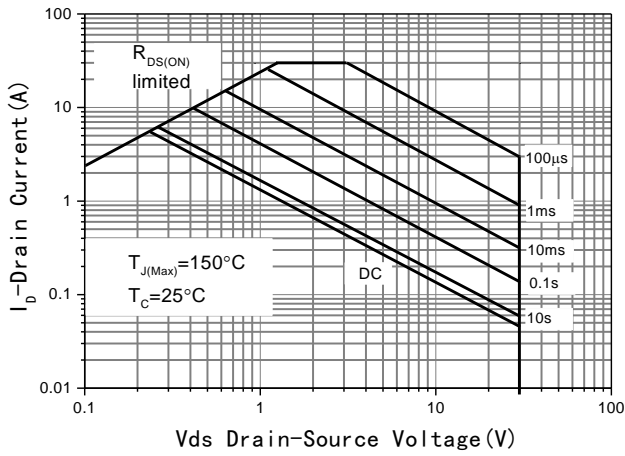


Fig9 Safe Operating Area

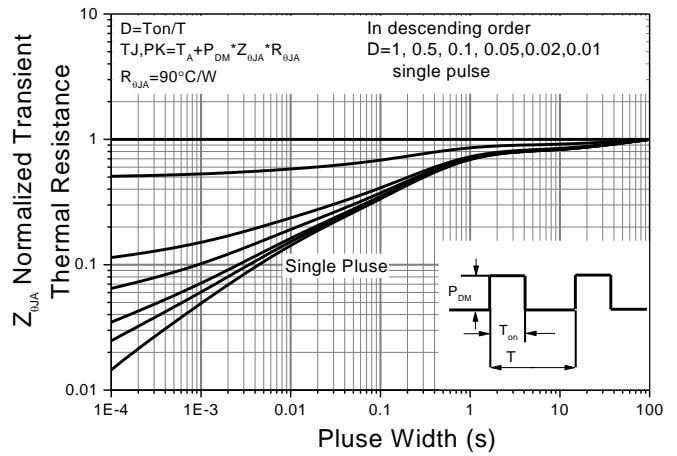
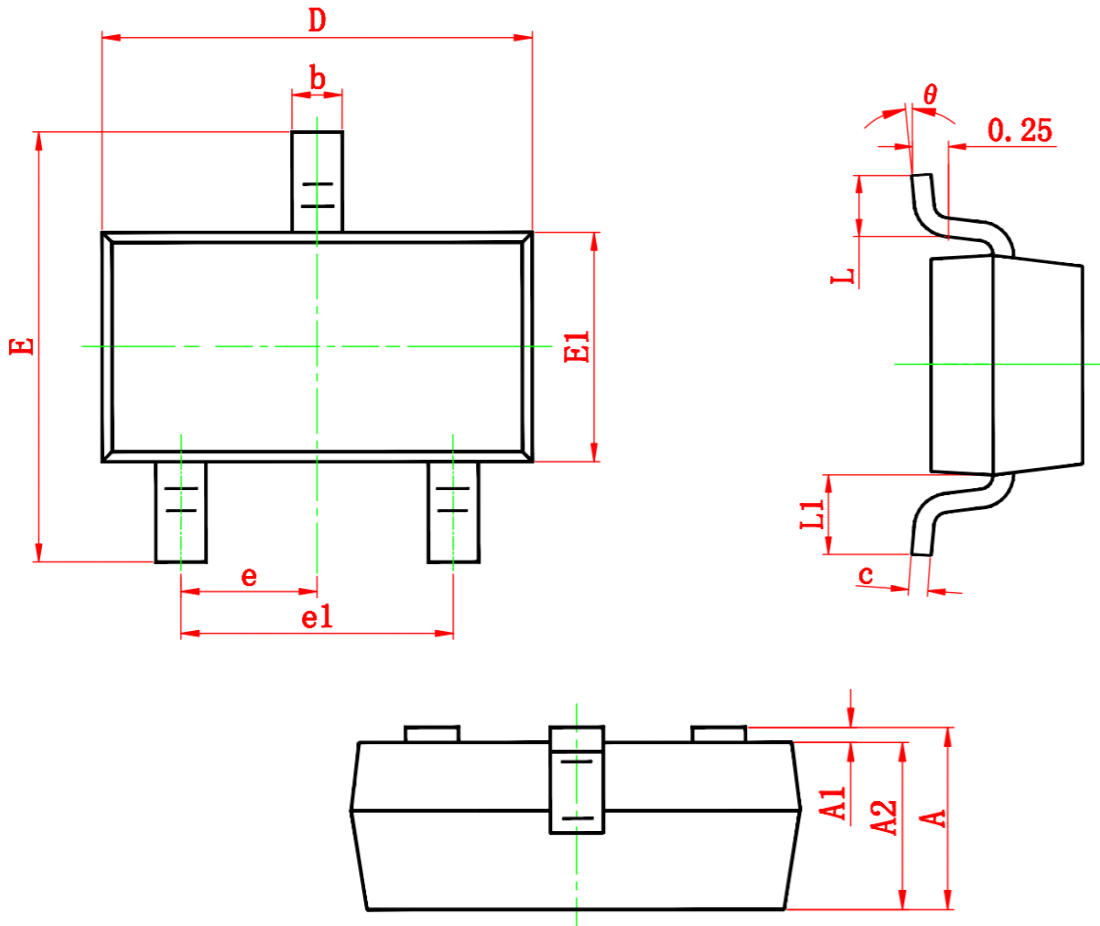


Fig10 Transient Thermal Response Curve

Package Information

- SOT-23



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.300	0.500	0.012	0.020
L1	0.550 REF.		0.022 REF.	
θ	0°	8°	0°	8°