20V Dual N-Channel Enhancement Mode MOSFET

Description

The PECN7222EMR uses advanced trench technology gto provide excellent $R_{DS(ON)}$low gate charge and operation with gate voltages as low as 2.5V. This , device is suitable for use as a load switch applications.

General Features

- V_{DS} =20V,ID =6A
  $R_{DS(ON)}$=20mΩ (typical) @ VGS=4.5V
  $R_{DS(ON)}$=24mΩ (typical) @ VGS=2.5V
- High power and current handing capability
- Lead free product is acquired
- Surface mount package
- ESD Protected up to 2kV HBM

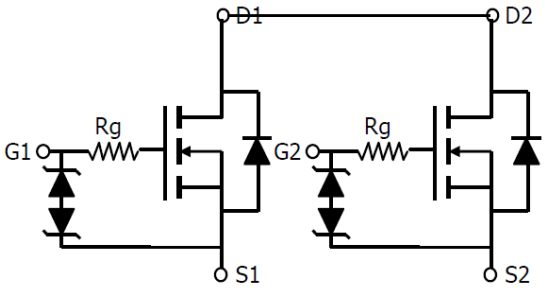
Application

- Battery protection
- Load switch
- Power management

Package

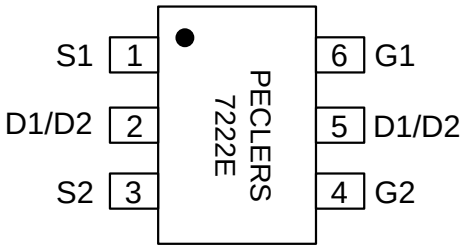
- SOT23-6L

Schematic diagram



Marking and pin assignment

SOT23-6L
(Topview)



Ordering Information

Part Number	Storage Temperature	Package	Devices Per Reel
PECN7222EMR	-55°C to +150°C	SOT-23	3000

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

parameter		symbol	limit	unit
Drain-source voltage		V_{DS}	20	V
Gate-source voltage		V_{GS}	±12	V
Drain Current-Continuous (Silicon Limited)	T_A=25°C	I_D	6	A
	T_A=75°C		4	
Pulsed Drain Current (Package Limited)		I_{DM}	24	A
Maximum power dissipation	T_A=25°C	P_D	1.5	W
	T_A=75°C		1	
Operating junction Temperature range		Tj	-55—150	℃

Electrical Characteristics (TA=25℃ unless otherwise noted)

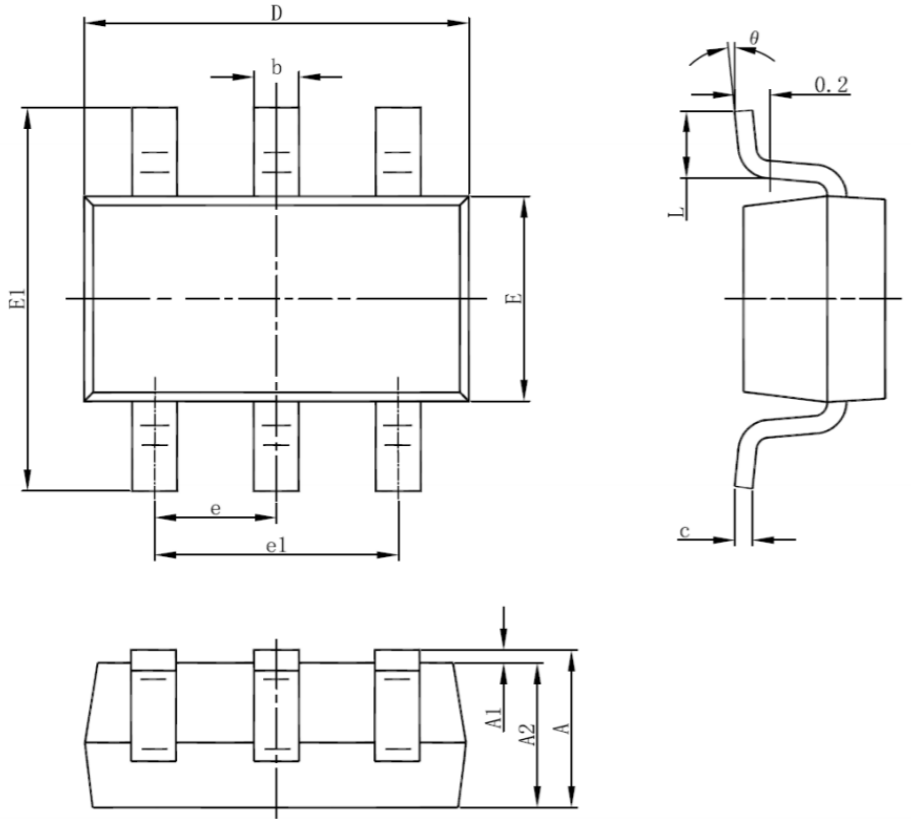
Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF Characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS}=0V, I_D=250μA	20	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=20V, V_{GS}=0V	-	-	1	μA
Gate-body leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±8V	-	-	±100	nA
		V_{DS}=0V, V_{GS}=±12V			±5	μA
ON Characteristics						
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.5	0.65	1.2	V
Drain-source on-state resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=6A	-	20	26	mΩ
		V_{GS}=2.5V, I_D=5A	-	24	30	
Forward transconductance	gfs	V_{DS}=5V, I_D=6A	-	10	-	S
Dynamic Characteristics						
Input capacitance	C_{ISS}	V_{DS}=10V ,V_{GS}=0V f=1.0MHz	-	180	-	pF
Output capacitance	C_{OSS}		-	95	-	
Reverse transfer capacitance	C_{RSS}		-	18	-	
Gate resistance	Rg	V_{DS}=0V ,V_{GS}=0V f=1.0MHz		2.7		kΩ
Switching Characteristics						
Turn-on delay time	$t_{D(ON)}$	V_{DS}=10V V_{GS}=4.5V R_L=10Ω R_{GEN}=6Ω	-	60	-	ns
Rise time	tr		-	82	-	
Turn-off delay time	$t_{D(OFF)}$		-	580	-	
Fall time	tf		-	243	-	
Total gate charge	Qg	V_{DS}=10V,I_D=6A V_{GS}=4.5V	-	8.5	-	nC
Gate-source charge	Qgs		-	1.4	-	
Gate-drain charge	Qgd		-	3	-	

Thermal Characteristics

Thermal Resistance junction-to ambient	Rth JA	100	℃/W

Package Information

- **SOT23-6L**



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°