

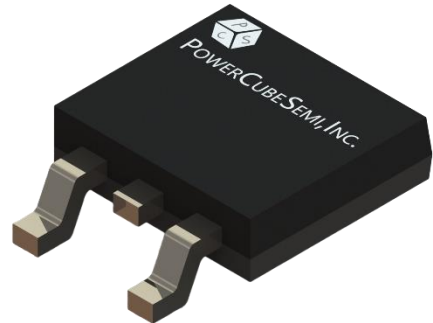
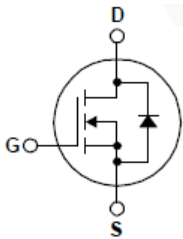
PSP007N065CR

650V 7A 1.021Ω Si Single N-channel Planar MOSFET

Features

Si Single N-channel Planar MOSFET

- Rated to 650V at 7Amps @ $T_j = 25^\circ\text{C}$
- Max $R_{DS(on)} = 1.28 \Omega$
- Typ $R_{DS(on)} = 1.021 \Omega$
- Low Gate Charge(Typ. $Q_g=15.6 \text{ nC}$)
- Low Crss(Typ. $Crss=1.5 \text{ pF}$)
- Fast Switching
- 100% Avalanche Tested
- Improved dv/dt capability



PKG type : DPAK (TO-252)

Absolute Maximum Ratings

Symbol	Parameter	Test Condition	Value	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	650	V
I_D	Drain Current	$T_c=25^\circ\text{C}$	7	A
I_{DM}	Pulsed Drain Current	Pulse width limited by junction temperature	28	A
V_{GS}	Gate-Source Voltage		± 30	V
E_{AS}	Single Pulsed Avalanche Energy		247	mJ
P_d	Power Dissipation	$T_c=25^\circ\text{C}$	32.9	W
T_j	Operating Junction Temperature		-55 to 150	$^\circ\text{C}$
T_{stg}	Storage Temperature		-55 to 150	$^\circ\text{C}$



Package Marking and Ordering Information

Device Marking	Device	Package	Packing Method	Tape width	Quantity
PSP007N065HR	PSP007N065	DPAK	-	-	-

Electrical Characteristics of Si MOSFET

Symbol	Parameter	Test Condition	Numerical			Unit
			Min	Typ.	Max.	
BV_{DSS}	Drain-source breakdown voltage	$V_{GS} = 0V, I_D = 250\mu A, T_J = 25^\circ C$	650	-	-	V
$BV_{DSS}/\Delta T_J$	Drain-source breakdown voltage	$I_D = 250\mu A, \text{Referenced to } T_J = 25^\circ C$	-	0.59	-	V/°C
I_{DSS}	Zero gate voltage drain current	$V_{DS} = 650V, V_{GS} = 0V$	-	-	1	μA
I_{GSS}	Gate-source leakage current	$V_{GS} = \pm 30V, V_{DS} = 0V$	-	-	± 100	nA
$V_{GS(th)}$	Gate threshold voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	-	4	V
$R_{DS(ON)}$	Static drain-source on state resistance	$V_{GS} = 10V, I_D = 3.5A$	-	1.021	1.28	Ω
g_{FS}	Forward Transconductance	$V_{DS} = 40V, I_D = 3.5A$	-	7	-	S
$t_{d(on)}$	Turn-on Delay time	$V_{DS} = 325V, I_D = 7A, R_G = 25\Omega$	-	12	-	ns
T_r	Turn-on Rise time		-	26	-	
$t_{d(off)}$	Turn-off Delay time		-	29	-	
T_f	Turn-off Fall time		-	27	-	



Electrical Characteristics of Si MOSFET

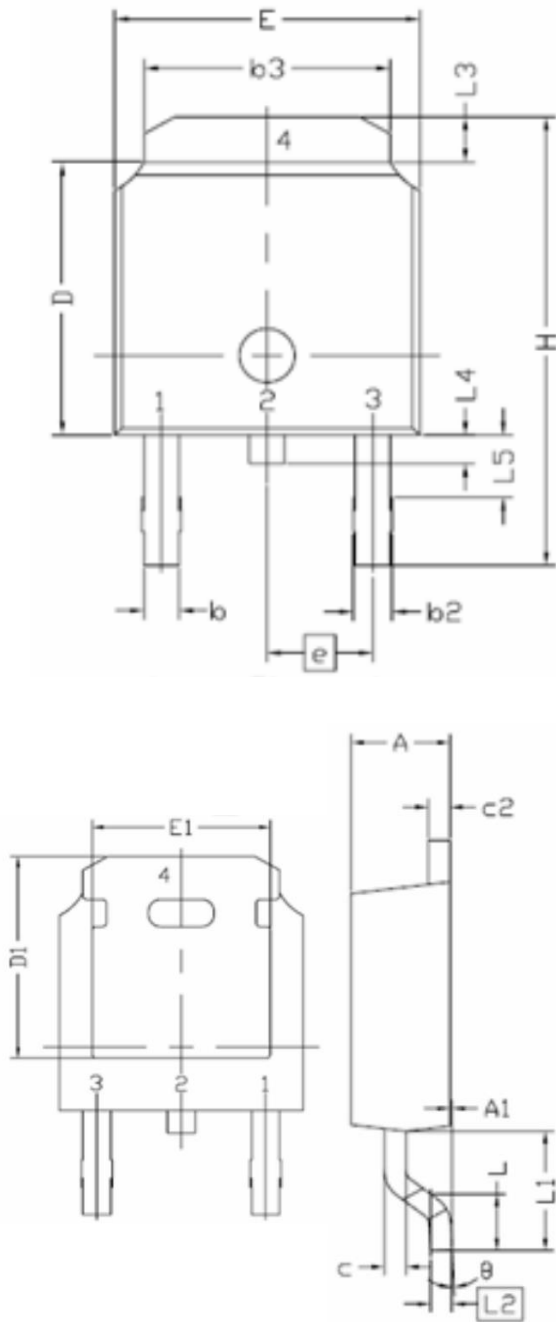
Symbol	Parameter	Test Condition	Numerical		Unit
			Typ.	Max.	
$R_{\theta JC}$	Thermal resistance, Junction to case		3.8	-	$^{\circ}\text{C}/\text{W}$
C_{iss}	Input capacitance	$V_{DS} = 25\text{V}, V_{GS} = 0\text{V},$ $f = 1.0\text{MHz}$	800	-	pF
C_{oss}	Output capacitance		101	-	
C_{rss}	Reverse transfer capacitance		1.5	-	
$Q_{g(tot)}$	Total gate charge	$V_{DS} = 52\text{V}, I_D = 7\text{A}$ $V_{GS(on)} = 10\text{V}$	15.6	-	nC
Q_{gs}	Gate to source gate charge		4.8	-	
Q_{gd}	Gate to drain "Miller" charge		4.1	-	

Electrical Characteristics of Si Diode

Symbol	Parameter	Test Condition	Numerical		Unit
			Typ.	Max.	
I_S	Maximum continuous drain to source diode forward current		-	7	A
I_{SM}	Maximum pulsed drain to source diode forward current		-	28	A
V_{SD}	Drain to source diode forward voltage	$I_{SD} = 7\text{A}, V_{GS} = 0\text{V}$	-	1.2	V
T_{rr}	Reverse recovery time	$V_{GS} = 0\text{V}, I_S = 7\text{A},$ $di_f/dt = 100\text{A}/\mu\text{s}$	389	-	ns
Q_{rr}	Reverse recovery charge		2.04	-	μC

Package Outline

Unit : mm



SYMBOL	DIMENSIONS			NOTES
	MIN	NOM	MAX	
E	6.34	6.54	6.74	
L	1.30	1.60	1.90	
L1	2.60	2.90	3.20	
L2	0.5 BSC			
L3	0.82	1.02	1.22	
L4	0.80	1.00	1.20	
L5	2.60	2.90	3.20	
D	5.80	6.10	6.40	
H	8.40	9.00	9.60	
b	1.42	1.52	1.62	
b2	2.35	2.55	2.75	
b3	5.20	5.30	5.40	
e	4.58 BSC			
A	2.08	2.28	2.48	
A1	0.00	0.15	-	
c	0.40	0.50	0.60	
c2	0.40	0.50	0.60	
D1	-	5.25	-	
E1	-	4.8	-	
θ	0.00°	10.00°		