



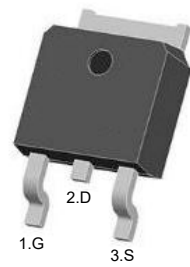
PJM10H50PTE

P-Channel Enhancement Mode Power MOSFET

Features

- Excellent $R_{DS(on)}$
- Advanced trench process technology
- $V_{DS} = -100V, I_D = -50A$
 $R_{DS(on)} < 50m\Omega @ V_{GS} = -10V$

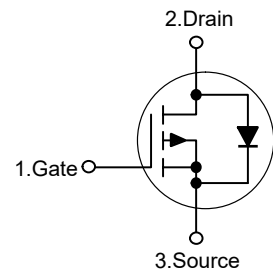
TO-252



Applications

- Power switch
- DC/DC converters

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C Case temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DS}$	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous and $V_{GS} = 10V$ ^{Note1}	$-I_D$	50	A
Drain Current-Pulsed ^{Note2}	$-I_{DM}$	100	A
Single Pulse Avalanche Energy ^{Note3}	E_{AS}	345	mJ
Avalanche Current	I_{AS}	28	A
Maximum Power Dissipation ^{Note4}	P_D	104	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note1}	$R_{\theta JA}$	62	°C/W
Maximum Junction-to-Case ^{Note1}	$R_{\theta JC}$	1.2	°C/W



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Electrical Characteristics

($T_J=25^\circ\text{C}$ unless otherwise specified)

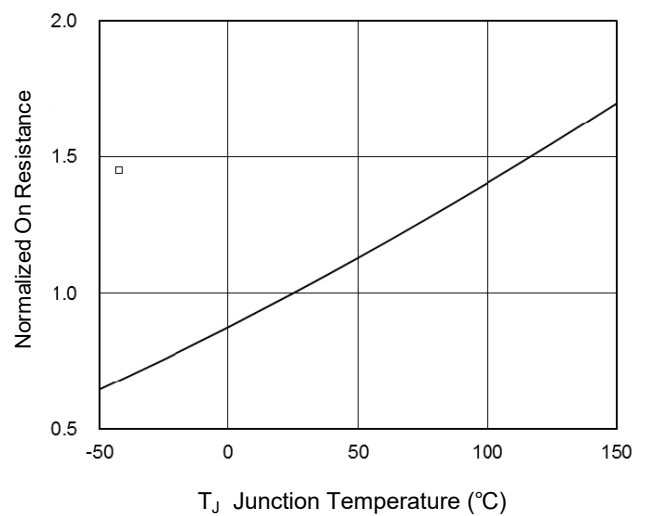
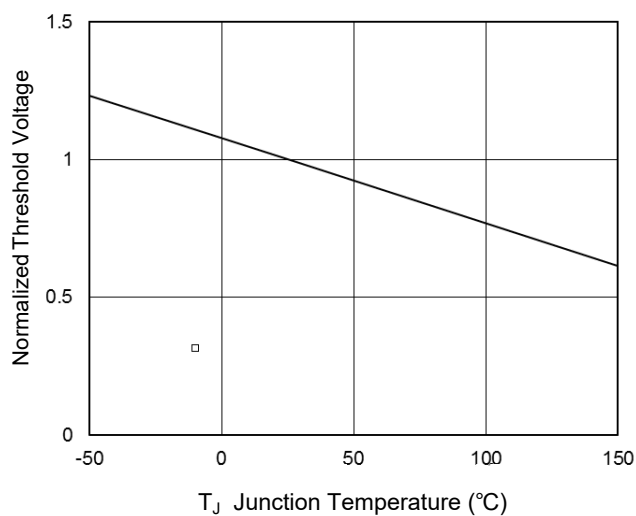
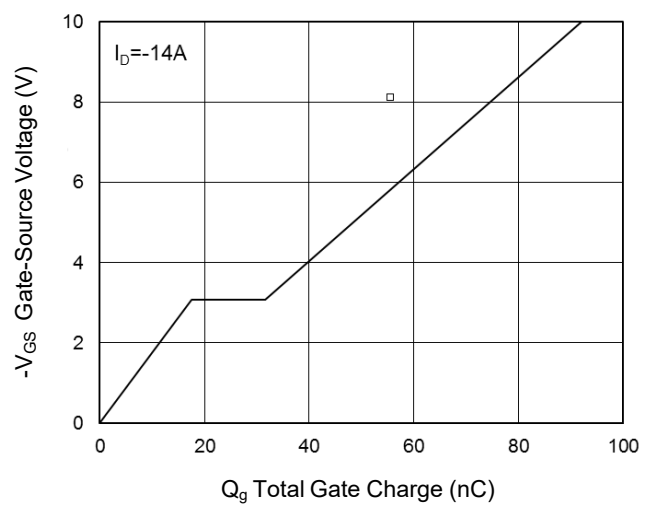
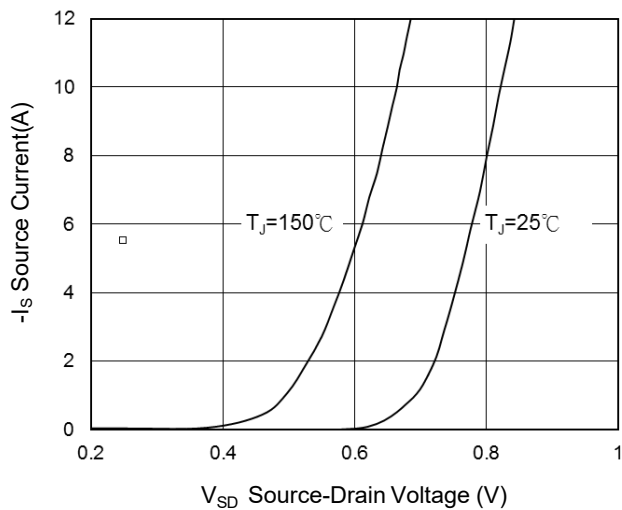
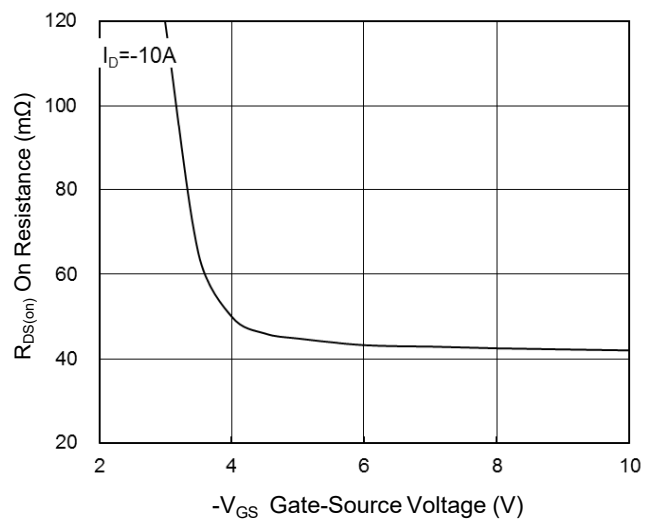
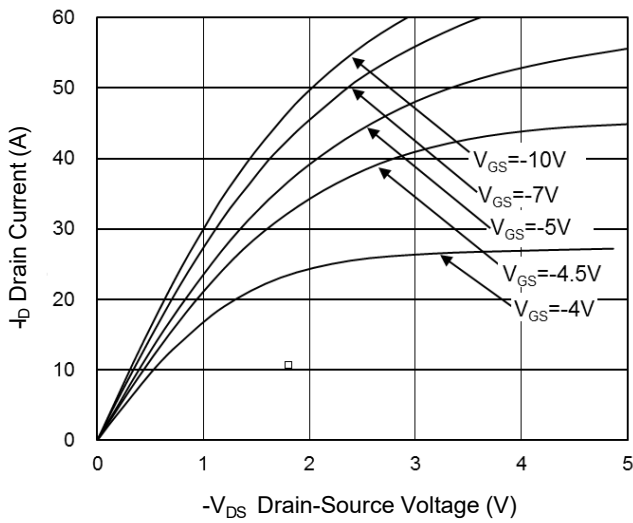
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$-V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	100	--	--	V
Zero Gate Voltage Drain Current	$-I_{DSS}$	$V_{DS}=-100V, V_{GS}=0V, T_J=25^\circ\text{C}$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	± 100	nA
Gate Threshold Voltage ^{Note2}	$-V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	1.0	1.8	2.5	V
Drain-Source On-Resistance ^{Note2}	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-10A$	--	42	50	m Ω
		$V_{GS}=-4.5V, I_D=-8A$	--	46	55	m Ω
Forward Transconductance ^{Note2}	g_{FS}	$V_{DS}=-10V, I_D=-10A$	--	32	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-25V, V_{GS}=0V, f=1\text{MHz}$	--	6516	--	pF
Output Capacitance	C_{oss}		--	223	--	pF
Reverse Transfer Capacitance	C_{rss}		--	125	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-50V, I_D=-14A,$ $V_{GS}=-10V, R_G=3.3\Omega$	--	20.5	--	nS
Turn-on Rise Time	t_r		--	32.2	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	123	--	nS
Turn-off Fall Time	t_f		--	63.7	--	nS
Total Gate Charge	Q_g	$V_{DS}=-80V, I_D=-14A,$ $V_{GS}=-10V$	--	92	--	nC
Gate-Source Charge	Q_{gs}		--	17.5	--	nC
Gate-Drain Charge	Q_{gd}		--	14	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note2}	$-V_{SD}$	$V_{GS}=0V, I_S=-1A, T_J=25^\circ\text{C}$	--	--	1.2	V
Diode Forward Current ^{Note1,5}	$-I_S$		--	--	35	A

Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- 3.The E_{AS} data shows Max. rating . The test condition is $V_{DD}=-25V, V_{GS}=-10V, L=0.88mH, I_{AS}=-28A$
- 4.The power dissipation is limited by 150°C junction temperature
- 5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.



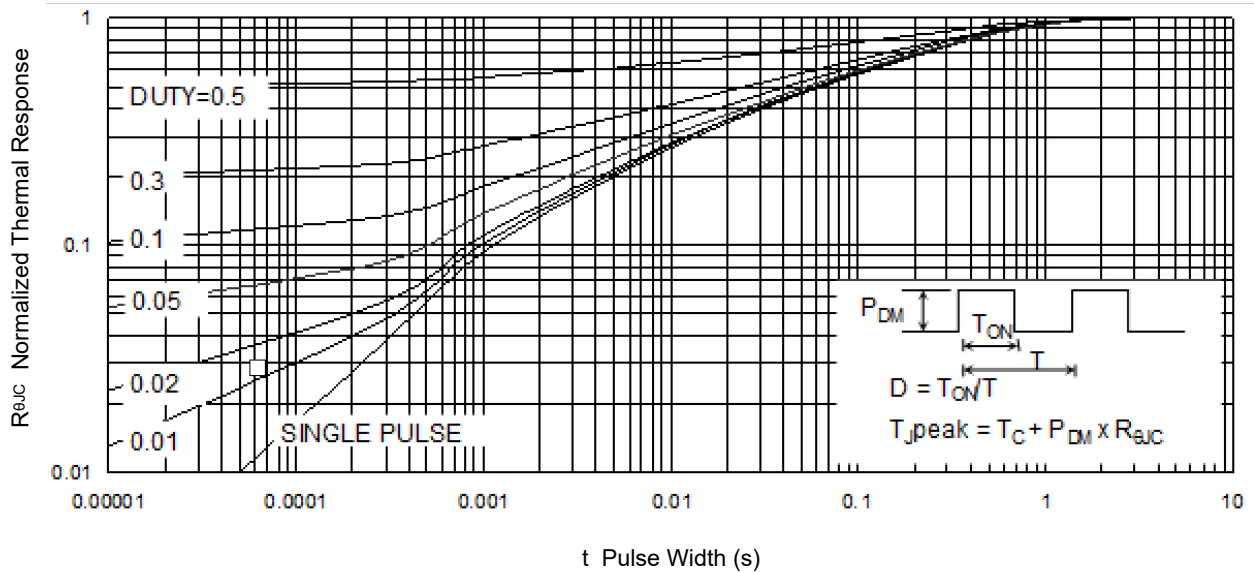
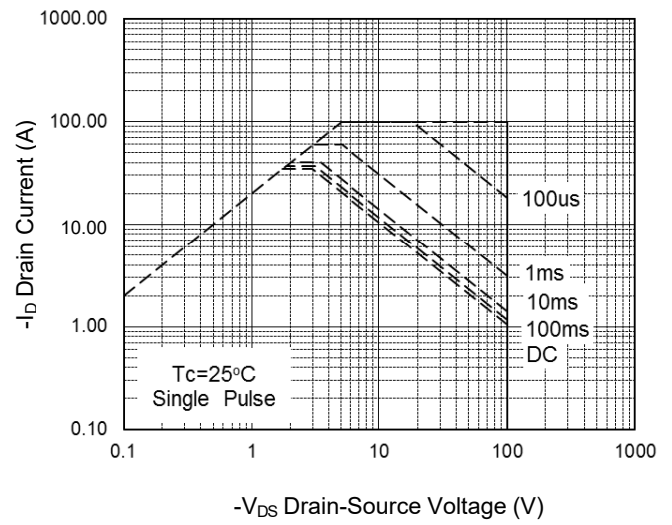
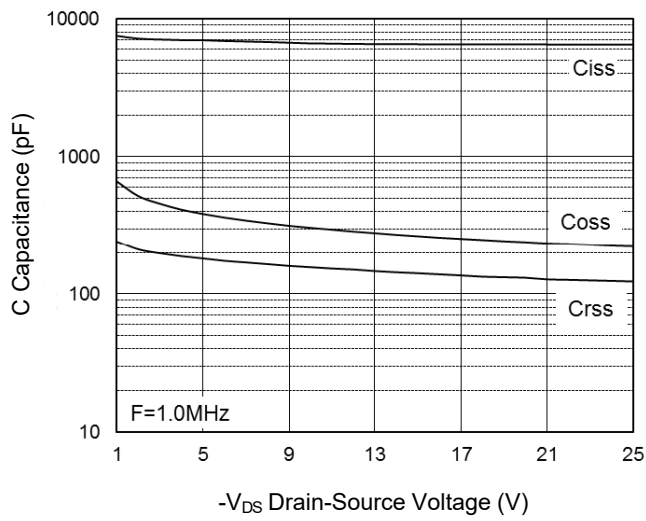
Typical Characteristic Curves





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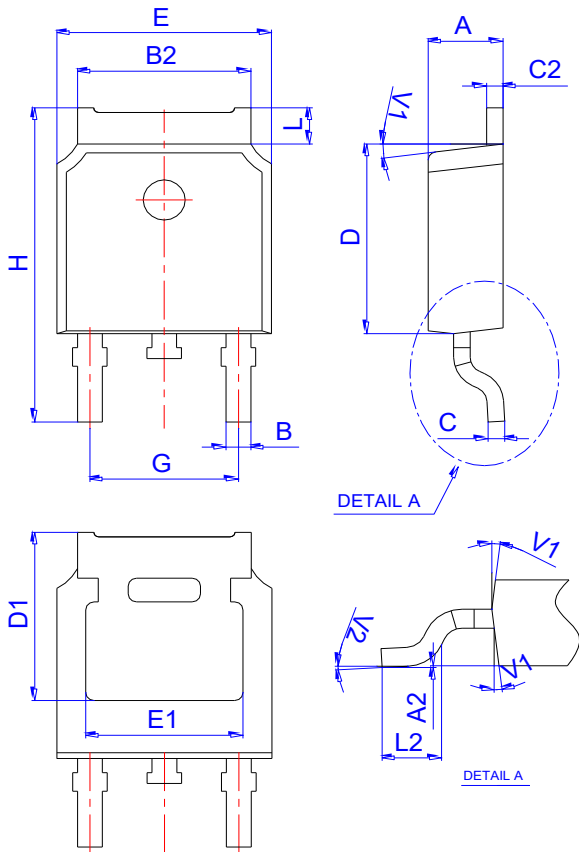
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Package Outline

TO-252

Dimensions in mm



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°