



PJM10N40PA

N-Channel Enhancement Mode Power MOSFET

Product Summary

- $V_{DS} = 40V, I_D = 10A$
- $R_{DS(on)} < 18m\Omega @ V_{GS} = 10V$
- $R_{DS(on)} < 25m\Omega @ V_{GS} = 4.5V$

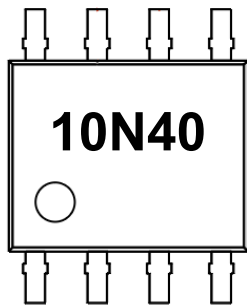
Features

- Advanced Trench Technology
- 100% Avalanche Tested
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 3

Application

- Load Switch
- PWM Applications
- Power Management

Marking Code



Absolute Maximum Ratings

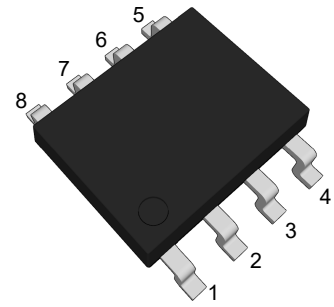
Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	10	A
Drain Current-Pulsed ^{Note1}	I_{DM}	40	A
Single Pulsed Avalanche Energy ^{Note4}	E_{AS}	6.8	mJ
Maximum Power Dissipation	P_D	2.5	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	50	°C/W
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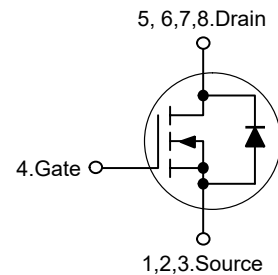
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(Top View)

Pin	Description
1,2,3	Source
4	Gate
5,6,7,8	Drain

Schematic Diagram





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Electrical Characteristics

(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	40	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V, V_{GS}=0V$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	± 100	nA
Gate Threshold Voltage ^{Note3}	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.1	1.5	2.5	V
Drain-Source On-Resistance ^{Note3}	$R_{DS(on)}$	$V_{GS}=10V, I_D=8A$	--	12.5	18	m Ω
		$V_{GS}=4.5V, I_D=5A$	--	16	25	m Ω
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=5V, I_D=1A$	--	6	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=20V, V_{GS}=0V, f=1MHz$	--	1250	--	pF
Output Capacitance	C_{oss}		--	114	--	pF
Reverse Transfer Capacitance	C_{rss}		--	85	--	pF
Total Gate Charge	Q_g	$V_{DS}=20V, V_{GS}=10V, I_D=5A$	--	20	--	nC
Gate-Source Charge	Q_{gs}		--	3.5	--	nC
Gate-Drain Charge	Q_{gd}		--	4.2	--	nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=20V, V_{GS}=10V, I_D=10A$ $R_{GEN}=3\Omega, R_L=1\Omega$	--	10	--	nS
Turn-on Rise Time	t_r		--	9	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	32	--	nS
Turn-off Fall Time	t_f		--	16	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	V_{SD}	$V_{GS}=0V, I_S=10A$	--	--	1.2	V
Diode Forward Current ^{Note2}	I_S		--	--	10	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2.Surface Mounted on FR4 Board, $t \leq 10$ sec.

3.Pulse Test: Pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$

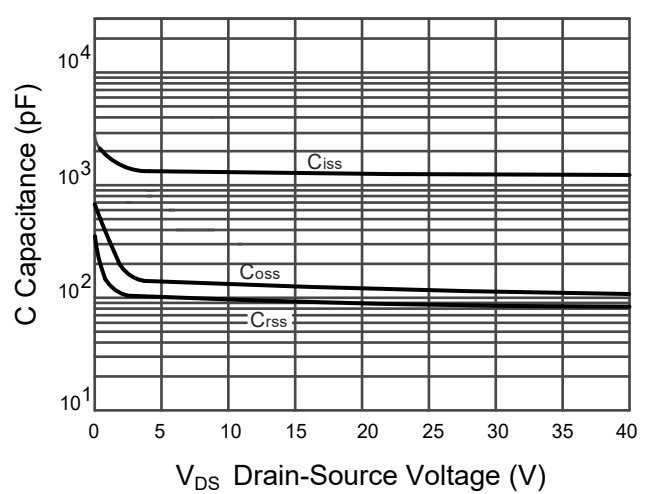
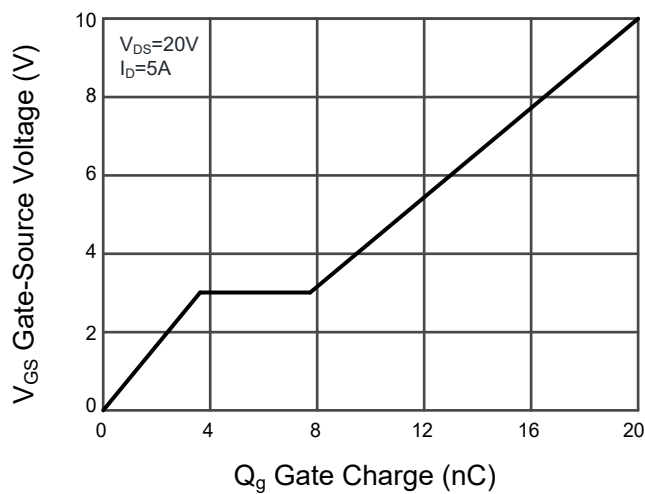
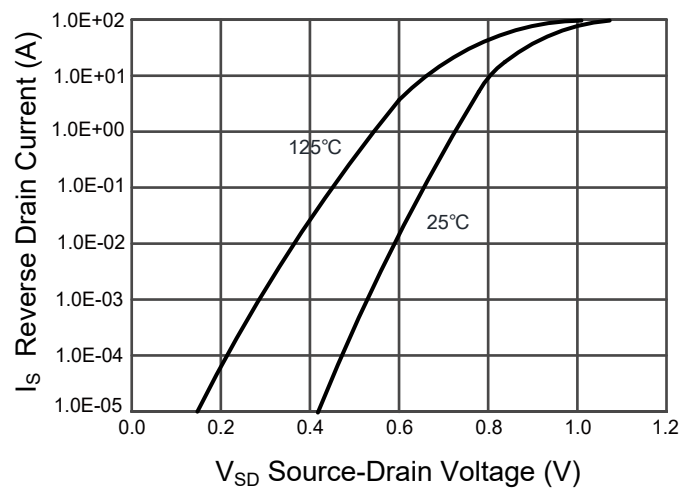
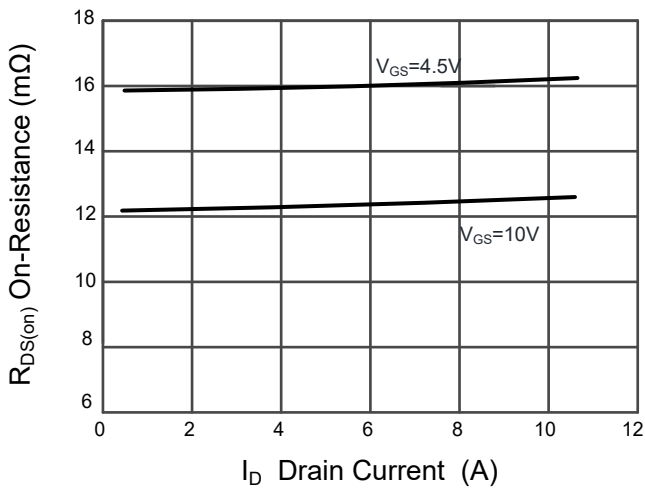
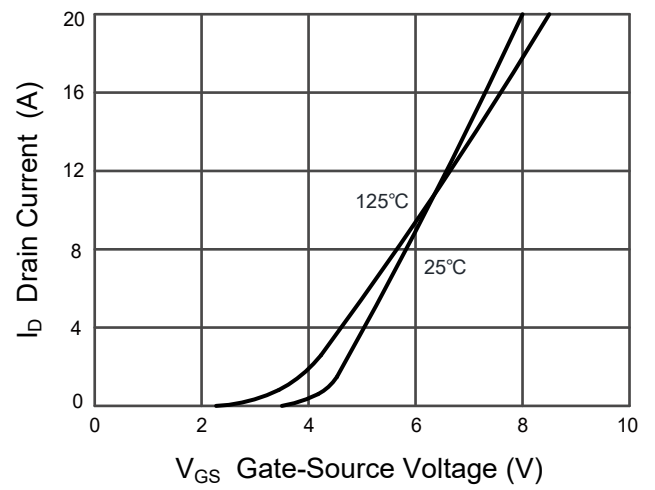
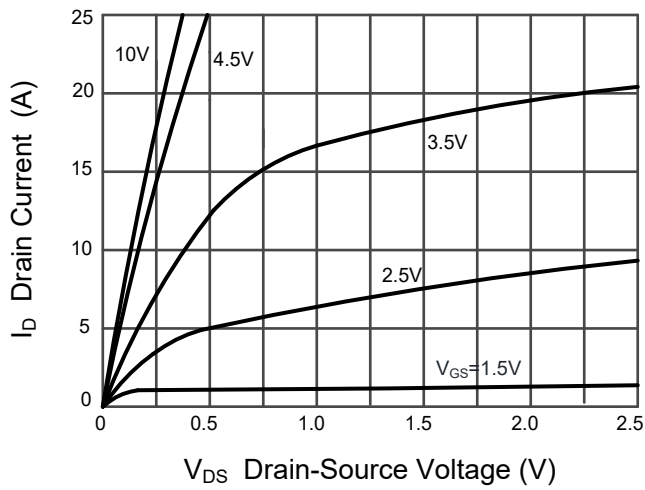
4.E_{AS} condition: T_J=25°C, V_{DD}=20V, V_G=10V, R_G=25 Ω , L=0.5mH, I_{AS}=5.2A



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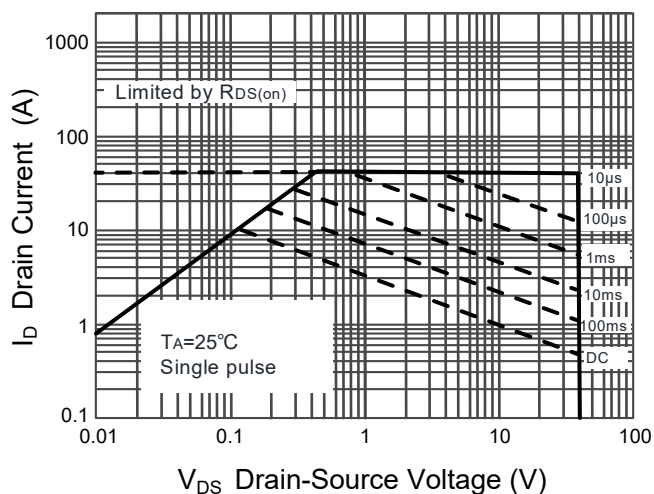
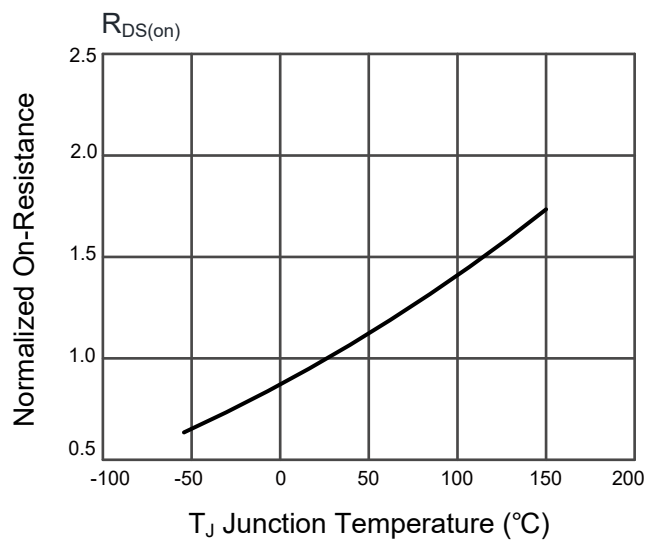
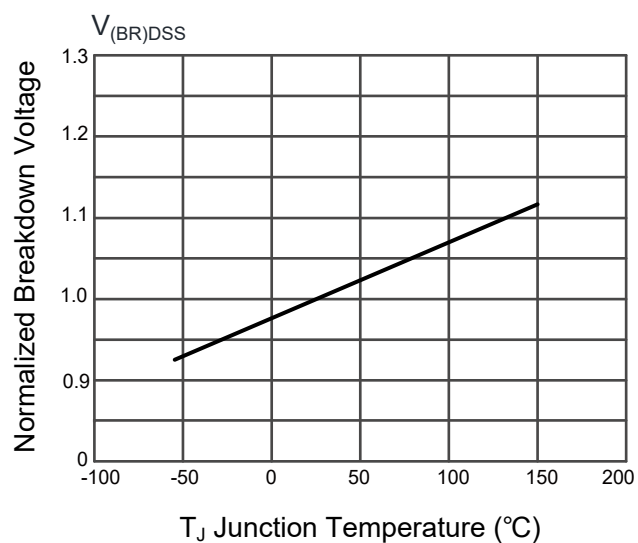
Typical Characteristic Curves





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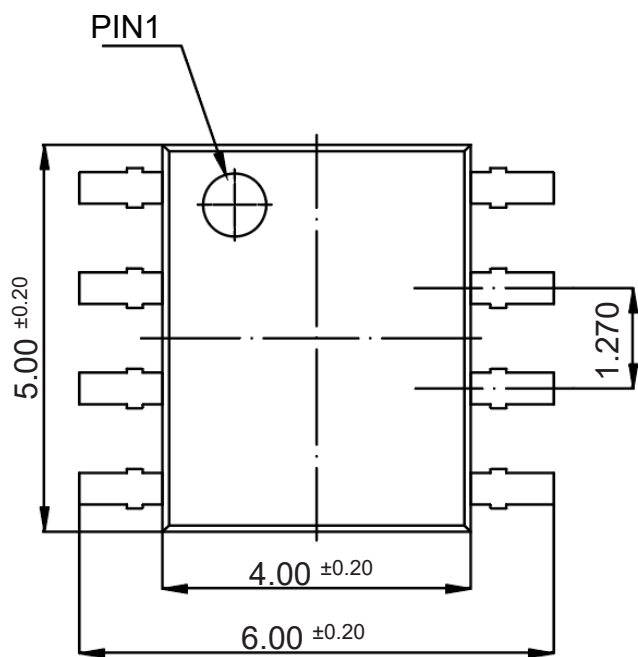
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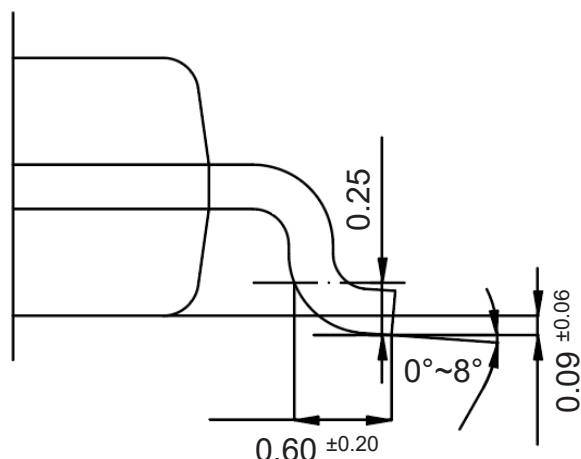
Package Outline

SOP-8

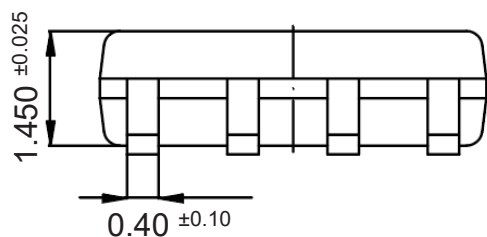
Dimensions in mm



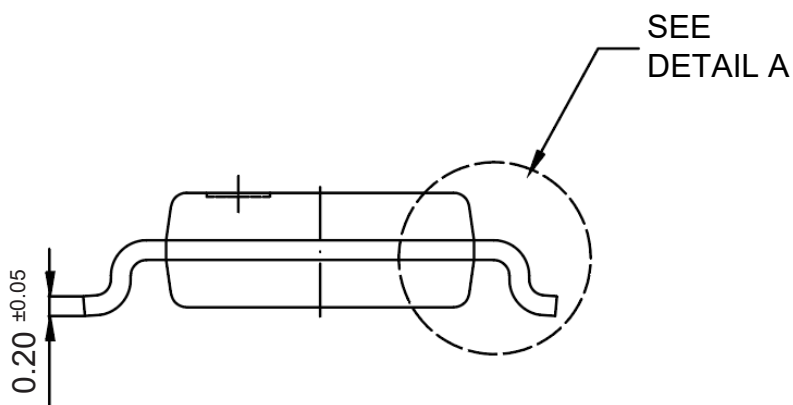
TOP VIEW



DETAIL A



SIDE VIEW



FRONT VIEW

Ordering Information

Device	Package	Shipping
PJM10N40PA	SOP-8	4,000PCS/Reel&13inches