



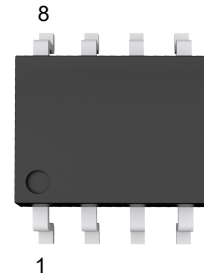
PJM06C60PA

N and P-Channel Complementary Power MOSFET

Features

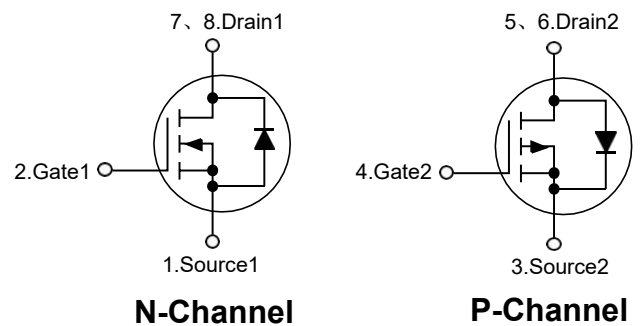
- **N-Channel**
 $V_{DS}=60V, I_D=6A$
 $R_{DS(on)} < 50m\Omega @ V_{GS}=10V$
- **P-Channel**
 $V_{DS}=-60V, I_D=-6A$
 $R_{DS(on)} < 70m\Omega @ V_{GS}=-10V$
- Low On-Resistance
- Advanced Trench Technology
- Fast Switching Speed

SOP-8



Marking Code:06C60

Schematic Diagram



Applications

- High Power and Current Handling Capability
- Lead Free Product is Acquired
- Surface Mount Package

Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage	V_{DS}	60	-60	V
Gate-Source Voltage	V_{GS}	±20		V
Drain Current-Continuous	I_D	6	-6	A
Drain Current-Pulsed ^{Note1}	I_{DM}	30	-25	A
Maximum Power Dissipation	P_D	2		W
Single pulse avalanche energy ^{Note4}	E_{AS}	16	30	mJ
Junction Temperature	T_J	150		°C
Storage Temperature Range	T_{STG}	-55 to +150		°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	62.5	°C/W
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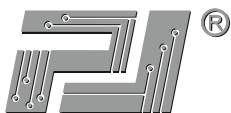
N-Channel

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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	--	--	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	1.6	2.5	V
Drain-Source On-Resistance ^{Note3}	$R_{DS(on)}$	$V_{GS}=10V, I_D=8A$	--	39	50	m Ω
		$V_{GS}=4.5V, I_D=6A$	--	46	70	m Ω
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=5V, I_D=1A$	--	4.2	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=30V, V_{GS}=0V, f=1\text{MHz}$	--	830	--	pF
Output Capacitance	C_{oss}		--	44.6	--	pF
Reverse Transfer Capacitance	C_{rss}		--	36	--	pF
Gate Resistance	R_g	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	--	0.65	--	Ω
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=30V, R_L=2.5\Omega$ $V_{GS}=10V, R_{GEN}=3\Omega$	--	5	--	nS
Turn-on Rise Time	t_r		--	2.6	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	16.1	--	nS
Turn-off Fall Time	t_f		--	2.3	--	nS
Total Gate Charge	Q_g	$V_{DS}=30V, I_D=6A, V_{GS}=10V$	--	14	--	nC
Gate-Source Charge	Q_{gs}		--	2.9	--	nC
Gate-Drain Charge	Q_{gd}		--	5.2	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	V_{SD}	$V_{GS}=0V, I_S=6A$	--	--	1.2	V
Diode Forward Current	I_S		--	--	6	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 $\leq 2\%$.
4. EAS Condition: $T_J=25^{\circ}\text{C}$, $V_{DD}=30V, V_G=10V, L=0.5\text{mH}, R_G=25\Omega, I_{AS}=8A$.



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P-Channel

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	$-V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	60	--	--	V
Zero Gate Voltage Drain Current	$-I_{DSS}$	$V_{DS}=-60V, V_{GS}=0V$	--	--	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	1.6	2.5	V
Drain-Source On-Resistance ^{Note3}	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-6A$	--	52	70	m Ω
		$V_{GS}=-4.5V, I_D=-6A$	--	60	90	m Ω
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=-5V, I_D=-1A$	--	5.5	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-30V, V_{GS}=0V, f=1MHz$	--	1070	--	pF
Output Capacitance	C_{oss}		--	69	--	pF
Reverse Transfer Capacitance	C_{rss}		--	59	--	pF
Gate Resistance	R_g	$V_{DS}=0V, V_{GS}=0V, f=1MHz$	--	3.7	--	Ω
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-30V, R_L=3.75\Omega$ $V_{GS}=-10V, R_{GEN}=3\Omega$	--	8	--	nS
Turn-on Rise Time	t_r		--	4	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	32	--	nS
Turn-off Fall Time	t_f		--	7	--	nS
Total Gate Charge	Q_g	$V_{DS}=-30V, I_D=-8A, V_{GS}=-10V$	--	23.4	--	nC
Gate-Source Charge	Q_{gs}		--	4.1	--	nC
Gate-Drain Charge	Q_{gd}		--	4.8	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	$-V_{SD}$	$V_{GS}=0V, I_S=-6A$	--	--	1.2	V
Diode Forward Current	$-I_S$		--	--	6	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 $\leq 2\%$.
 4. EAS Condition: $T_J=25^\circ\text{C}$, $V_{DD}=-30V, V_{GS}=-10V, L=0.5mH, R_G=25\Omega, I_{AS}=-11A$.

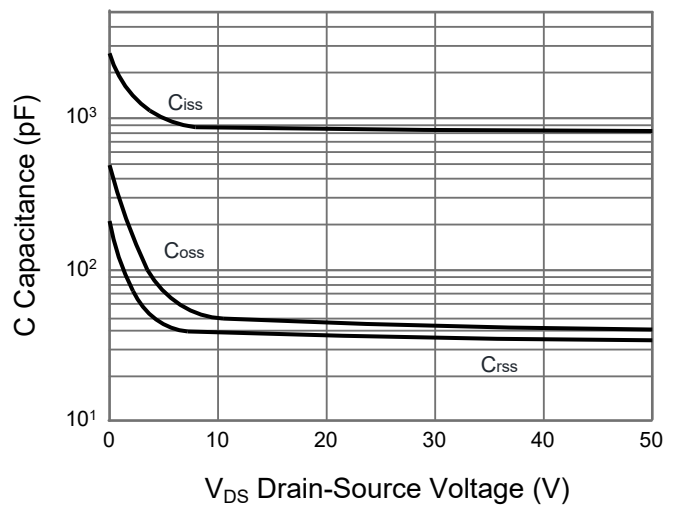
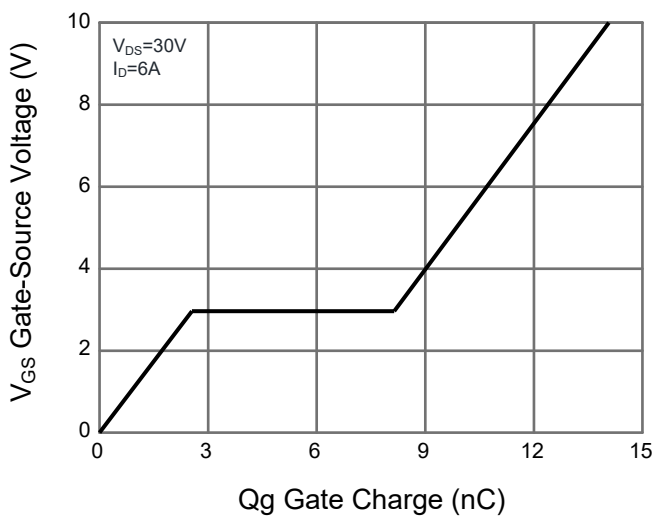
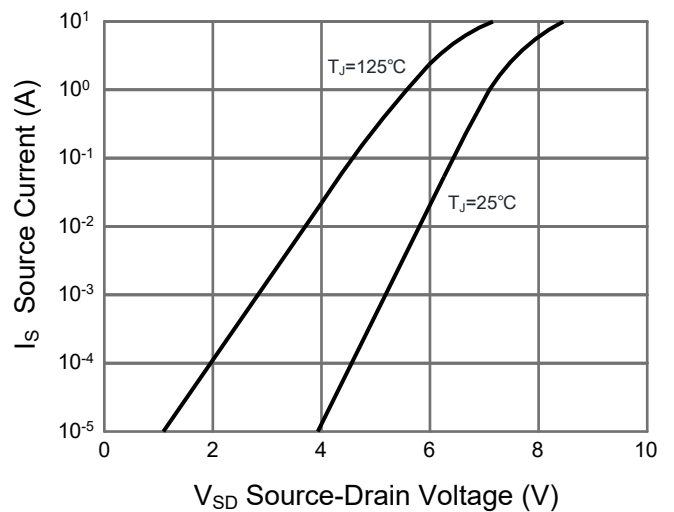
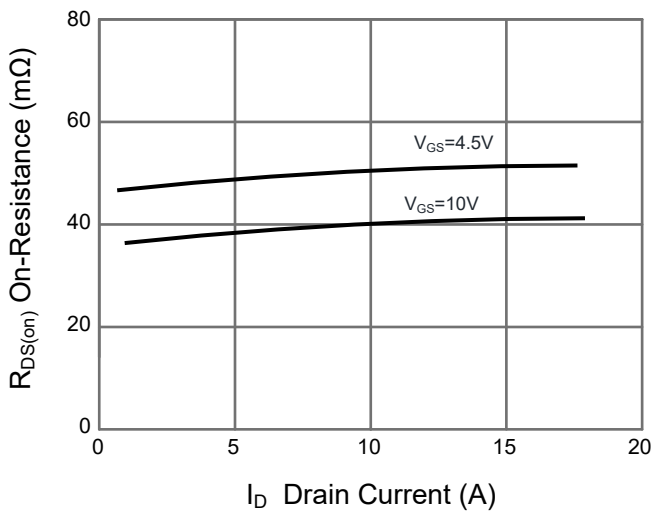
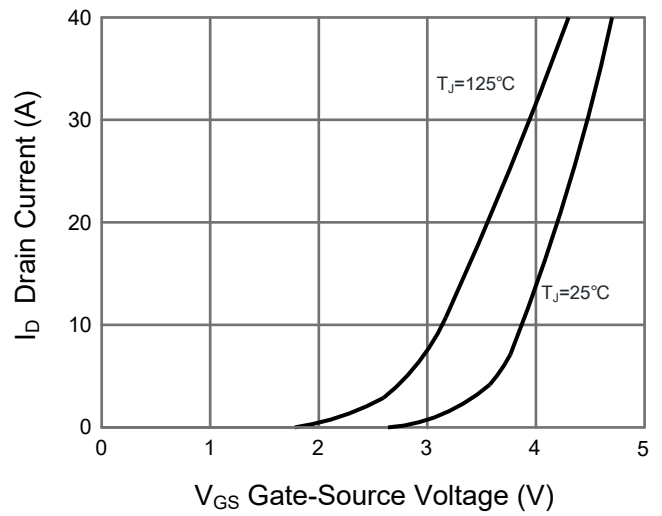
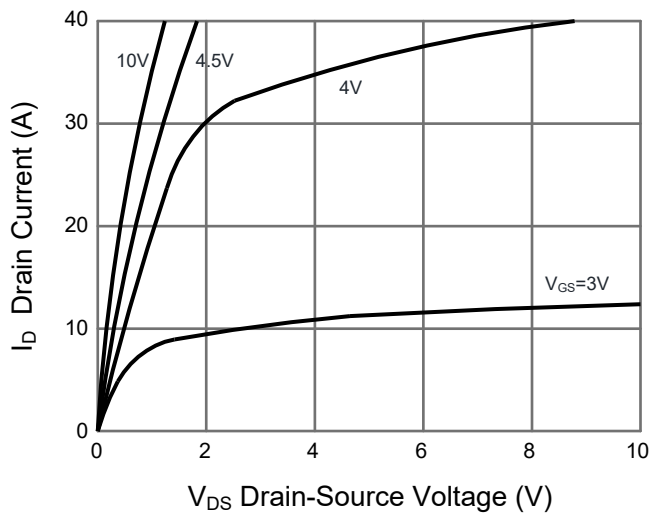


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N-Channel

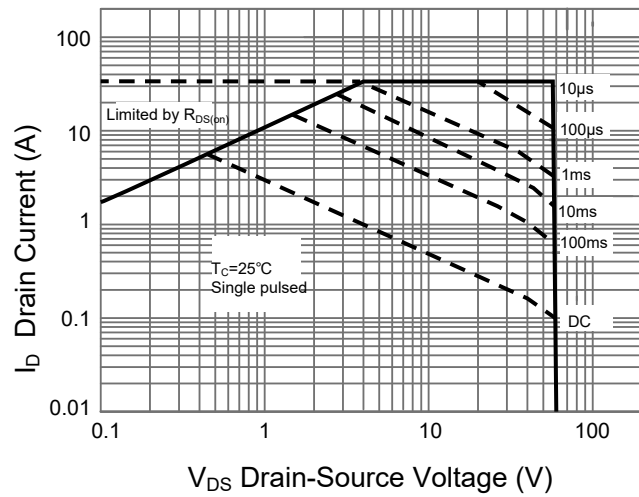
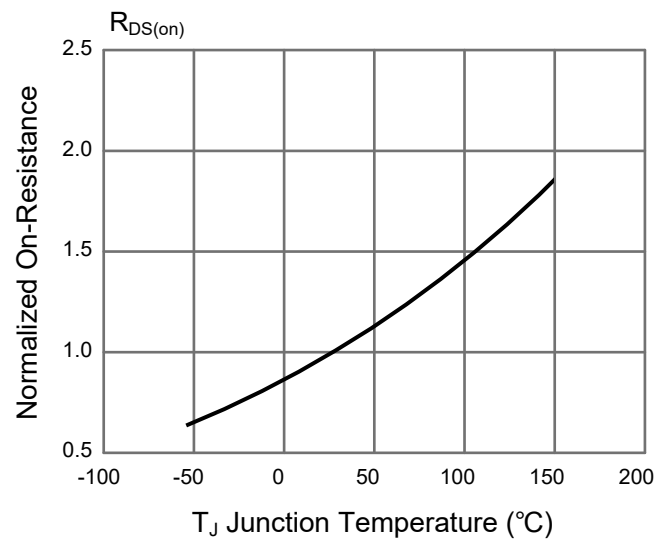
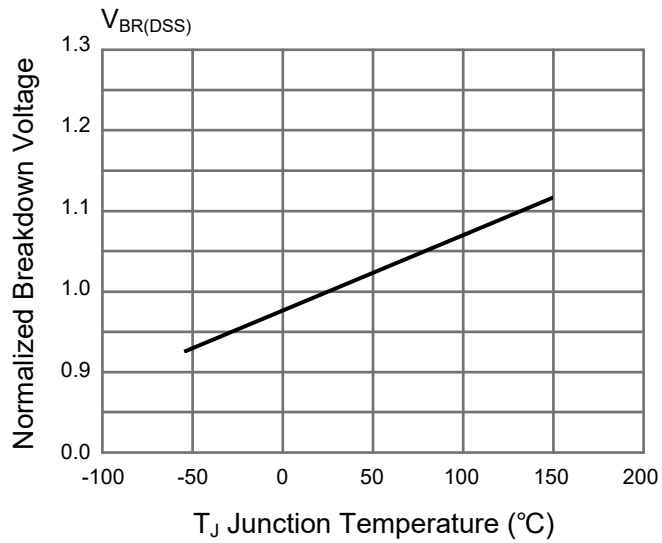
Typical Characteristics Curves





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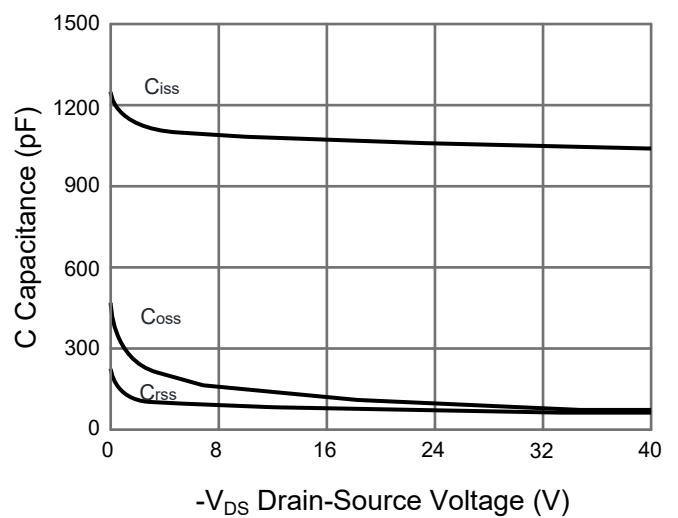
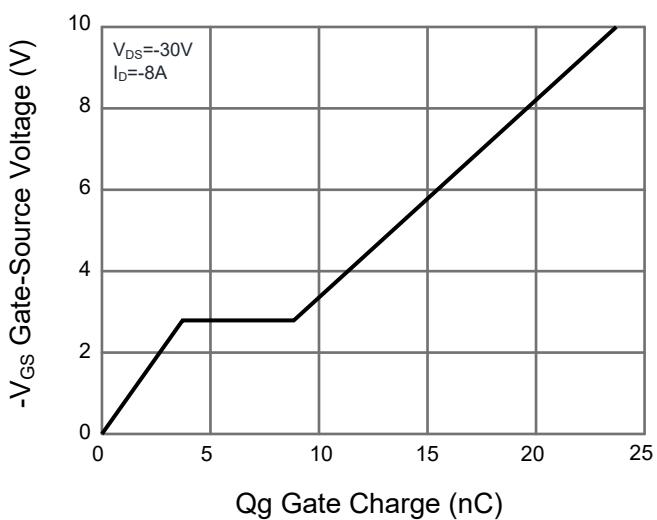
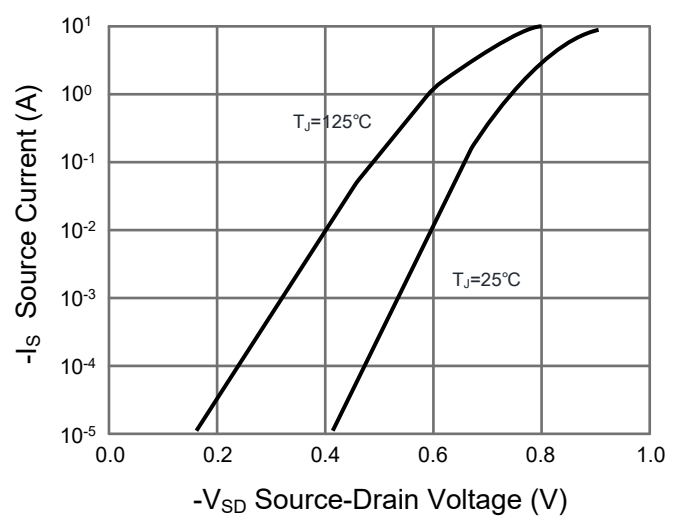
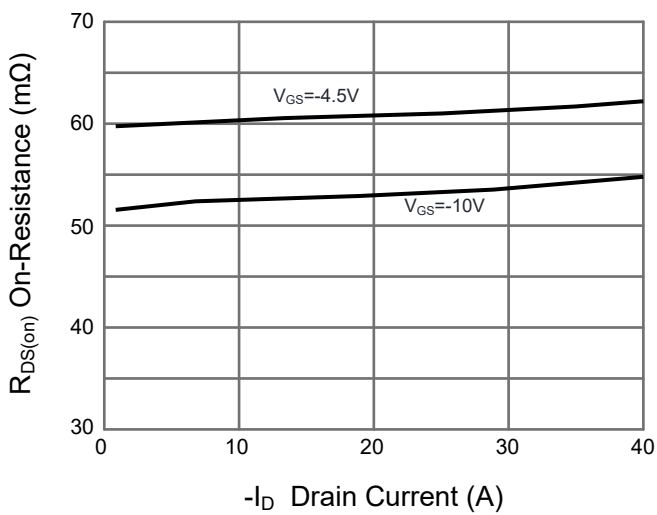
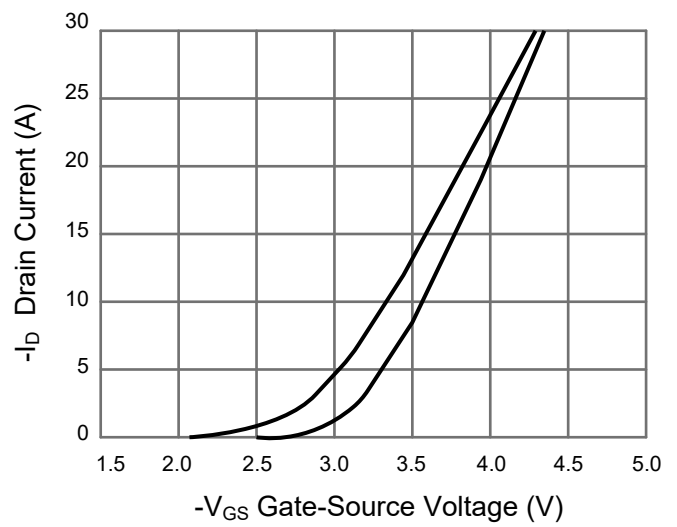
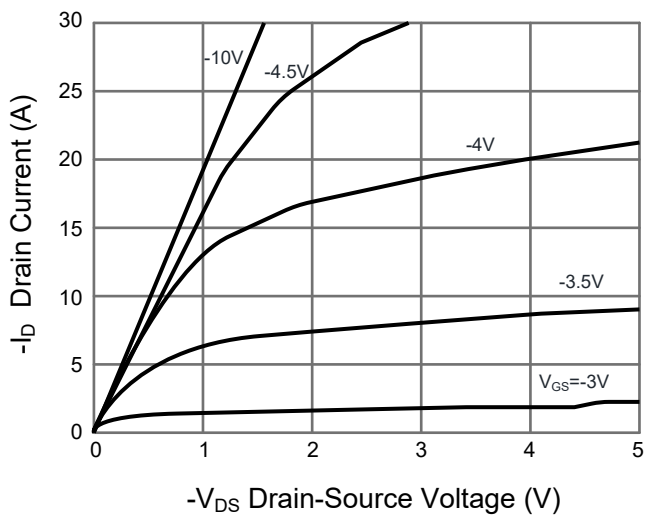


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P-Channel

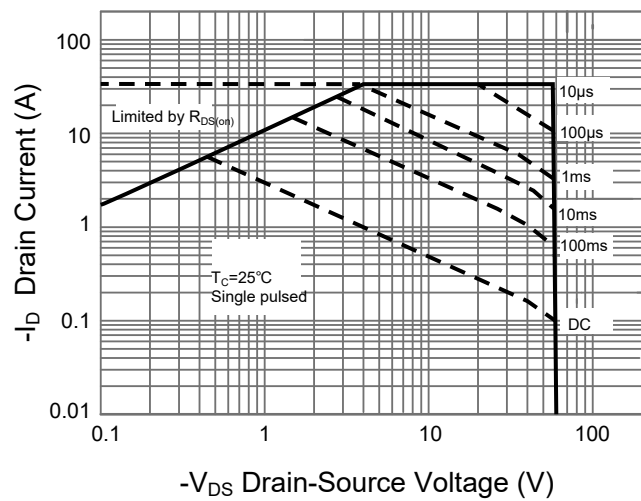
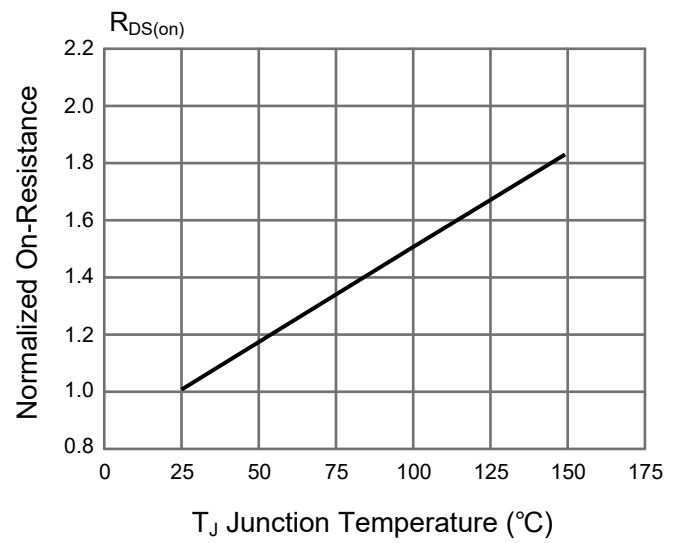
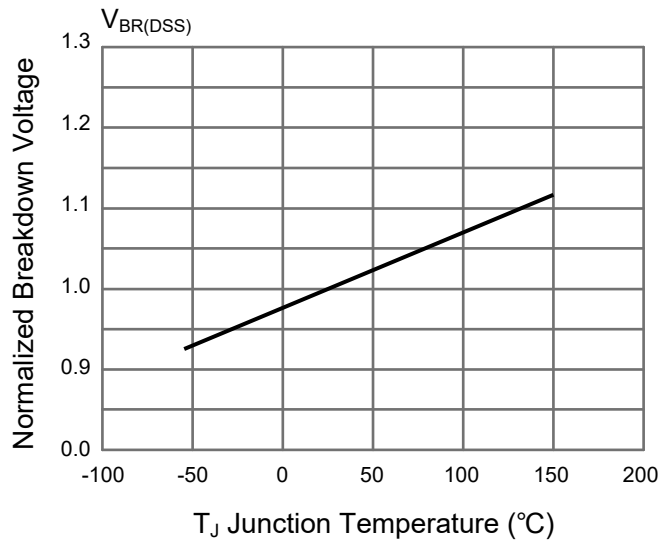
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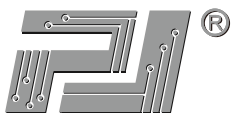




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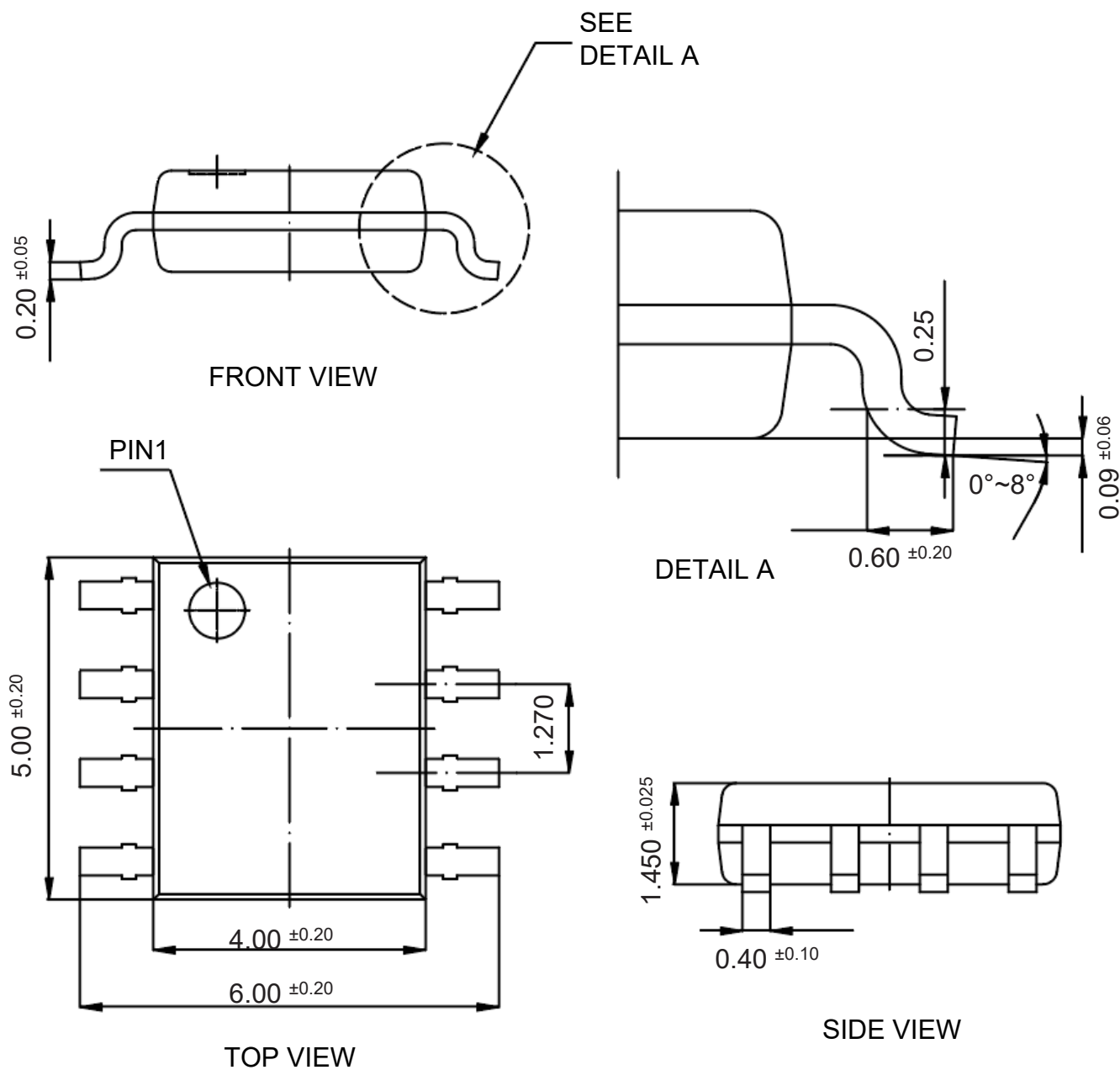
PJM06C60PA

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Package Outline

SOP-8

Dimensions in mm



Ordering Information

Device	Package	Shipping
PJM06C60PA	SOP-8	4,000PCS/Reel&13inches

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