



PJMG40P60TE

P-Channel Enhancement Mode Power MOSFET

Product Summary

- $V_{DS} = -60V, I_D = -40A$
- $R_{DS(on)} < 28m\Omega @ V_{GS} = -10V$

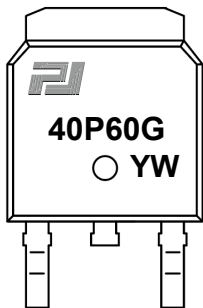
Features

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

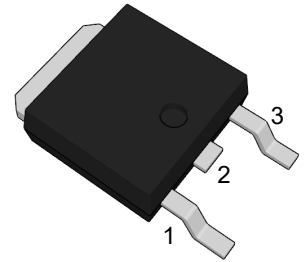
Application

- Battery Switching Application
- Hard Switched and High Frequency Circuits
- Power Management

Marking Code



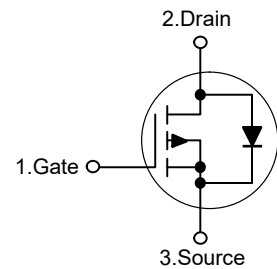
TO-252



(Top View)

Pin	Description
1	Gate
2	Drain
3	Source

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C case temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DS}$	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	$-I_D$	40	A
Drain Current-Pulsed ^{Note1}	$-I_{DM}$	320	A
Maximum Power Dissipation	P_D	65	W
Single pulse avalanche energy ^{Note2}	E_{AS}	90	mJ
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.9	°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	$-V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	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}	$-V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	1.2	1.75	2.5	V
Drain-Source On-Resistance ^{Note3}	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-15A$	--	18	25	m Ω
		$V_{GS}=-4.5V, I_D=-10A$	--	21	30	m Ω
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=-5V, I_D=-1A$	--	5	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$	--	1505	--	pF
Output Capacitance	C_{oss}		--	302	--	pF
Reverse Transfer Capacitance	C_{rss}		--	17	--	pF
Gate Resistance	R_g	$V_{DS}=0V, V_{GS}=0V, f=1MHz$	--	7	--	Ω
Total Gate Charge	Q_g	$V_{DS}=-30V, I_D=-3A,$ $V_{GS}=0\sim -10V$	--	23	--	nC
Gate-Source Charge	Q_{gs}		--	4	--	nC
Gate-Drain Charge	Q_{gd}		--	3	--	nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-30V, I_D=-4A,$ $V_{GS}=-10V, R_{GEN}=6\Omega$	--	7	--	nS
Turn-on Rise Time	t_r		--	5	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	65	--	nS
Turn-off Fall Time	t_f		--	20	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage	$-V_{SD}$	$V_{GS}=0V, I_S=-6A$	--	--	1.2	V
Diode Forward Current	$-I_S$		--	--	40	A

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

2. EAS condition: $T_J=25^{\circ}\text{C}, V_{DD}=-30V, V_G=-10V, L=0.5\text{mH}, R_G=25\Omega, I_{AS}=-19A$.

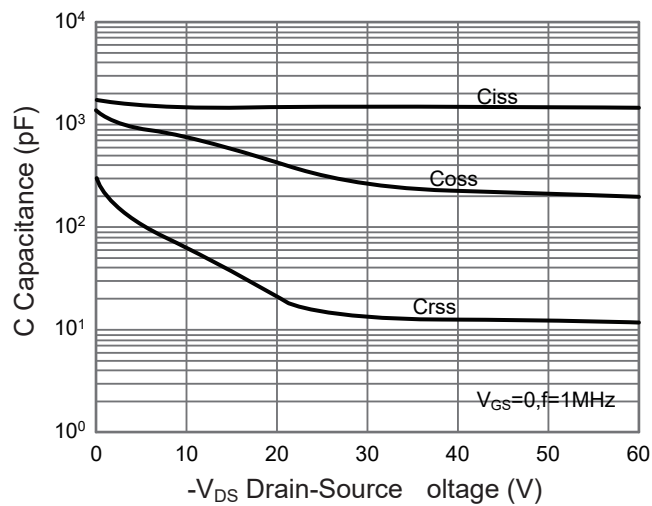
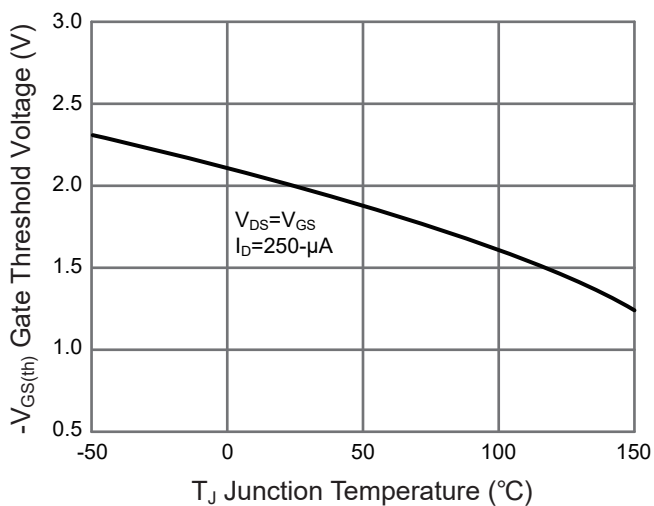
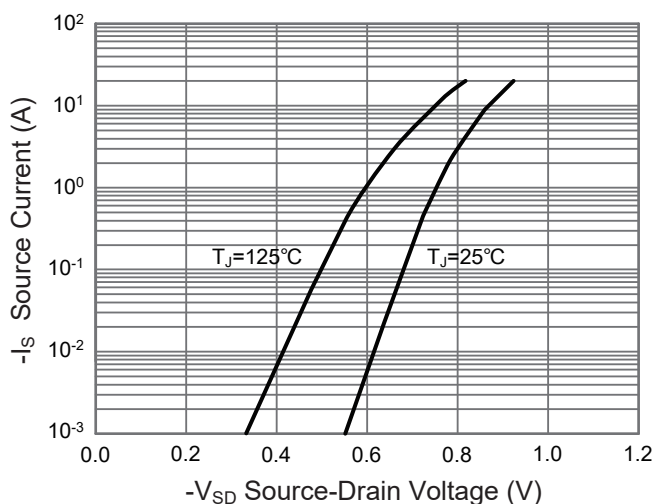
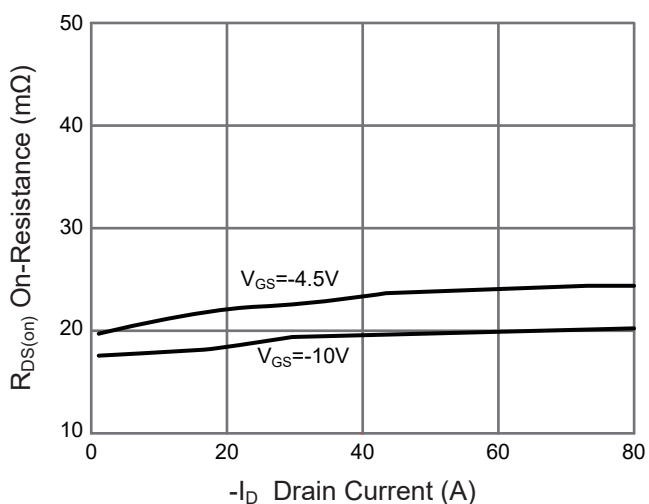
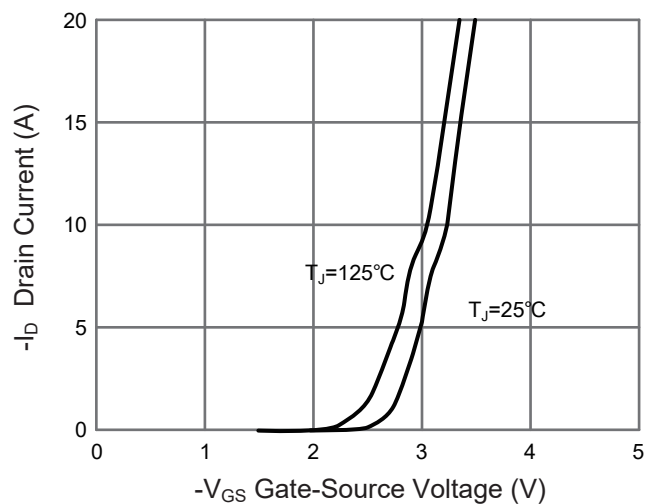
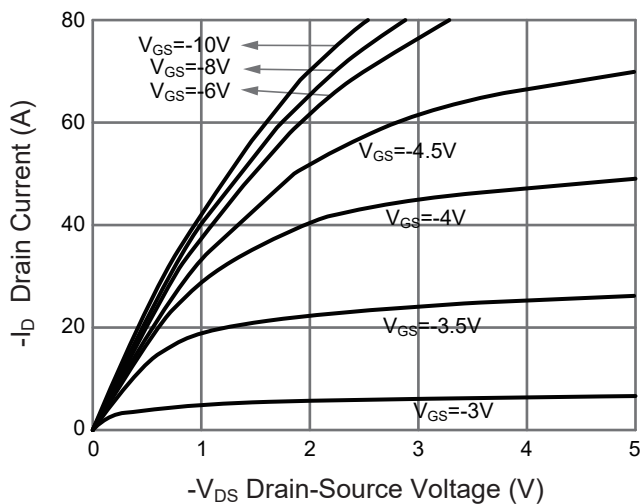
3. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 0.5\%$.



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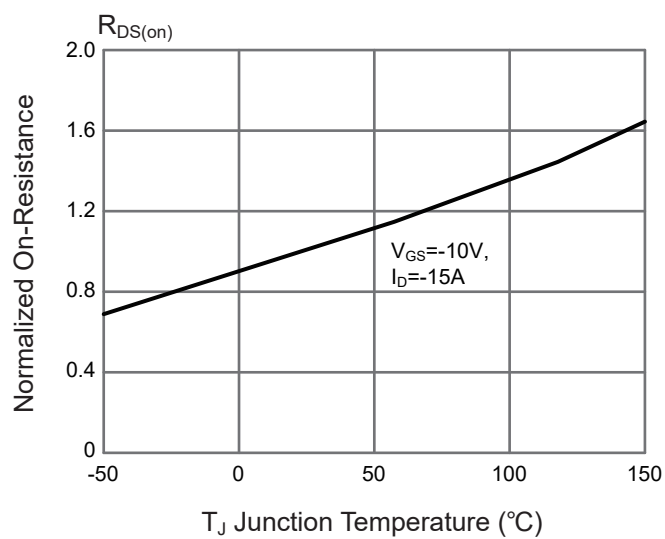
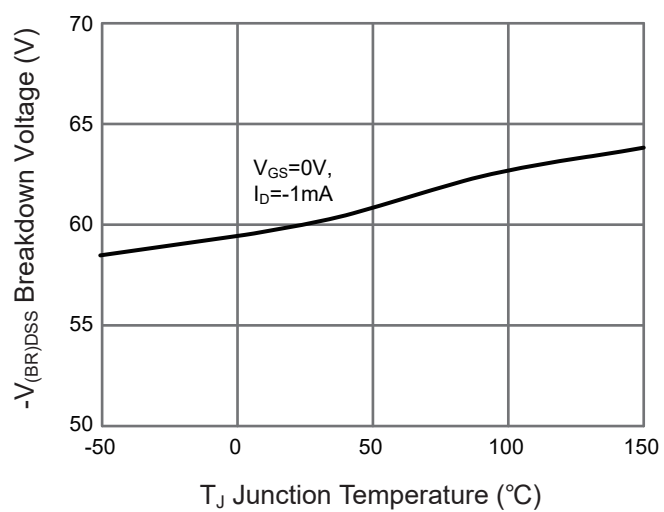
Typical Characteristic Curves





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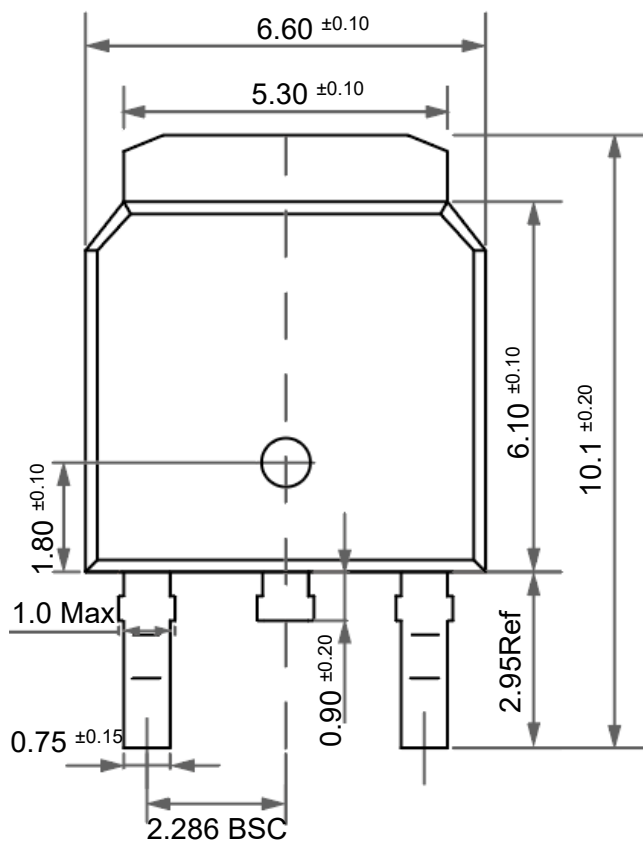
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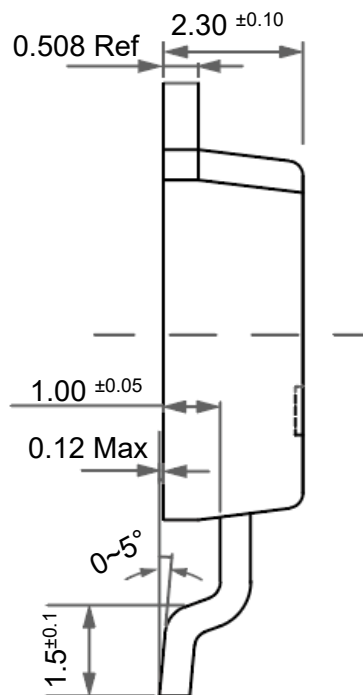
Package Outline

TO-252

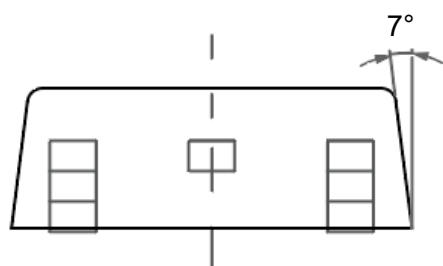
Dimensions in mm



Front View



Side View



Bottom View

Ordering Information

Device	Package	Shipping
PJMG40P60TE	TO-252	2,500PCS/Reel&13inches