

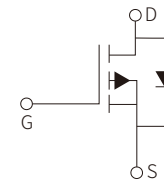
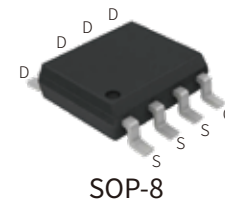
FEATURES

| $V_{DS} = -20V$

| $I_D = -5 A (V_{GS} = -12V)$

| $R_{DS(ON)} < 50m\Omega (V_{GS} = -4.5V)$

| $R_{DS(ON)} < 65m\Omega (V_{GS} = -2.5V)$



Schematic Symbol

APPLICATION

| Load/Power Switching for portable device

| Charging device

| Power supply converters circuit

APPROVALS

RoHS Compliance with 2011/65/EU

HF Compliance with IEC61249-2-21:2003

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Continuous Drain Current	I_D	-5	A
Power Dissipation	P_D	2	W
Gate-Source Voltage	V_{GS}	± 12	V
Thermal Resistance.Junction- to-Ambient	$R_{\theta JA}$	62.5	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Junction Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}C$

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate-body leakage current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$			± 10	μA
Zero gate voltage drain current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$			-1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.5		-1.0	V
Drain-source on-state resistance ⁽¹⁾	$R_{DS(on)}$	$V_{GS}=-4.5V, I_{DS}=-0.5A$		42	50	m Ω
		$V_{GS}=-2.5V, I_{DS}=-0.5A$		55	65	m Ω
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_{SD}=-1A$		-0.7	-1.3	V
Dynamic characteristics						
Input capacitance	C_{iss}	$V_{DS}=-10V, V_{GS}=0V, f=1MHz$		438		pF
Output capacitance	C_{oss}			76		pF
Reverse transfer capacitance	C_{rss}			62		pF
Turn-on delay time	$t_{d(on)}$	$V_{DS}=-10V, I_D=-2.3A$ $V_{GS}=-4.5V, R_{GEN}=3\Omega$		7.6		ns
Turn-on Rise Time	t_r			31		ns
Turn-Off Delay Time	$t_{d(off)}$			40.5		ns
Turn-off Fall yime	t_f			46		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, I_D=-2.3A$ $V_{GS}=-4.5V$		5.8		nC
Gate-Source Charge	Q_{gs}			1.45		nC
Gate-Drain Charge	Q_{gd}			1.15		nC
Reverse Recovery Chrage	Q_{rr}	$I_F=-2.3A, di/dt=100A/\mu s$		1.15		nC
Reverse Recovery Time	t_{rr}			1.15		nC

Notes:

1. CP measured on wafer by probe card.

PARAMETER CHARACTERISTIC CURVE

Fig 1: Output Characteristics

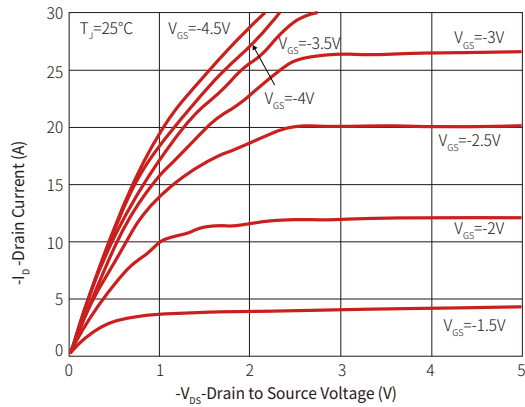


Figure 2: Transfer Characteristics

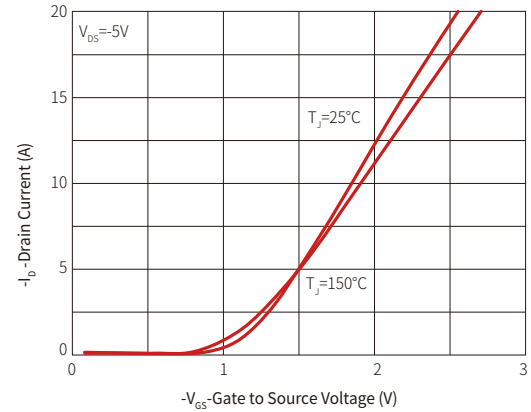


Figure 3: Capacitance Characteristics

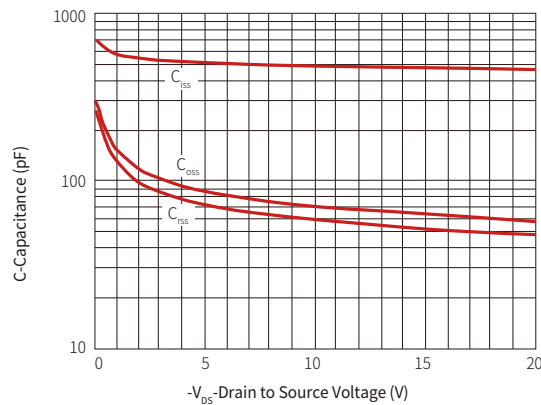


Figure 4: Gate Charge

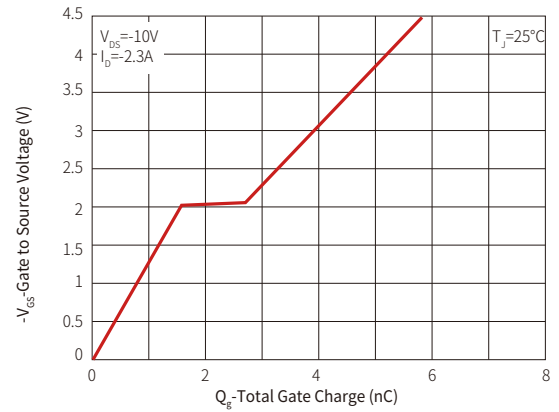


Figure 5: On-Resistance vs Gate to Source Voltage

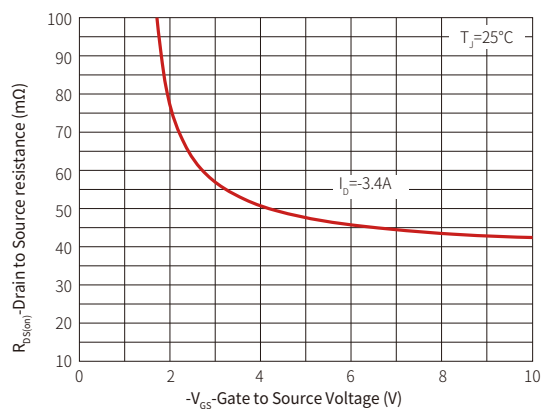


Figure 6: Normalized On-Resistance

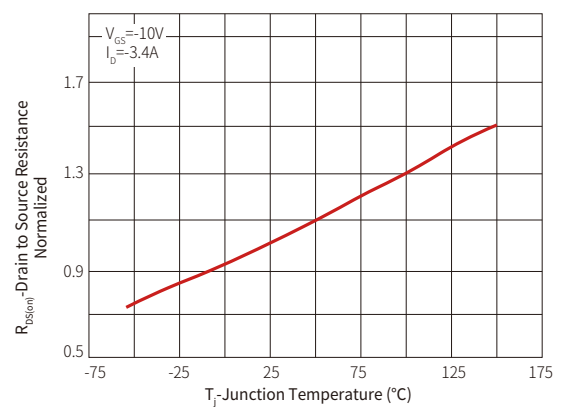
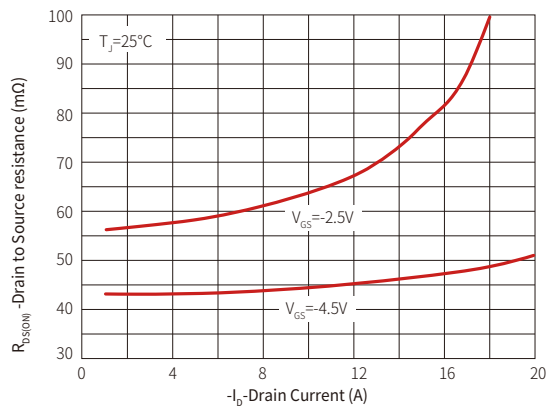
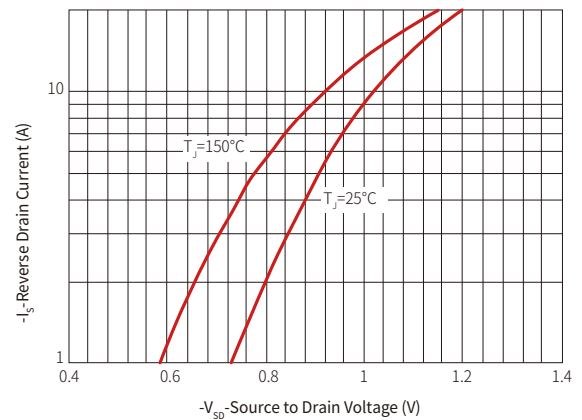
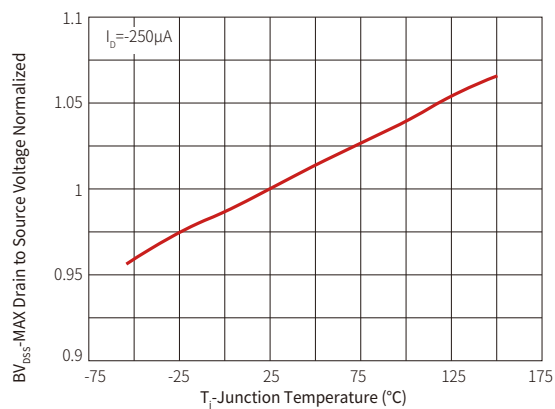
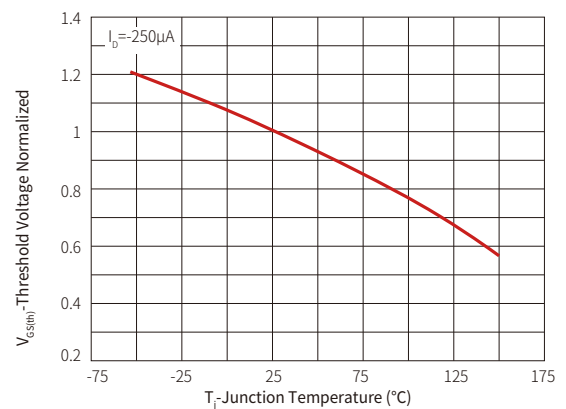
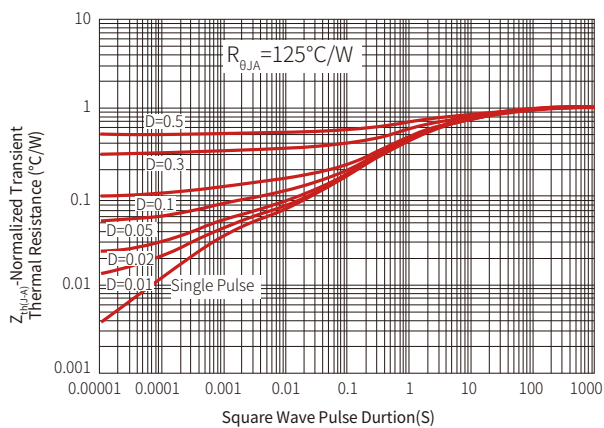
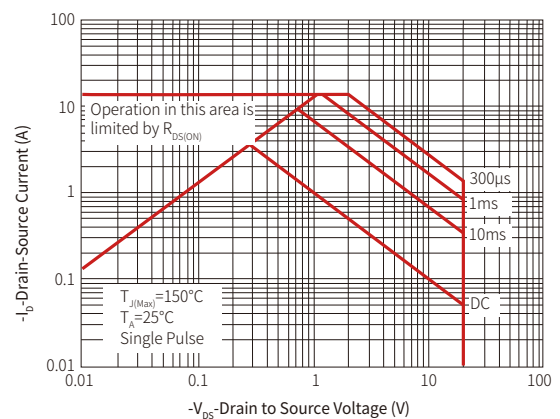
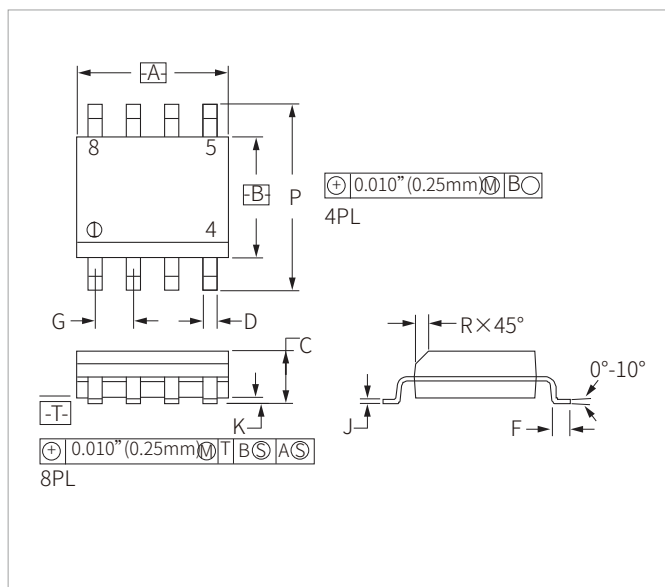


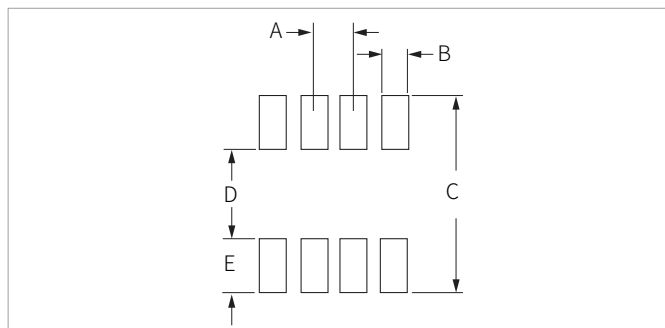
Fig 7: $R_{DS(on)}$ VS Drain Current

Figure 8: Forward characteristics of reverse diode

Figure 9: Normalized breakdown voltage

Figure 10: Normalized Threshold voltage

Figure 11: Maximum Transient Thermal Impedance

Figure 12: Safe Operation Area


SOP-8 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.80	5.20	0.189	0.205
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27BSC		0.050BSC	
J	0.18	0.25	0.007	0.009
K	0.10	0.25	0.004	0.008
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	1.14	1.40	0.045	0.055
B	0.64	0.89	0.025	0.035
C	6.22	-	0.245	-
D	3.94	4.17	0.155	0.165
E	1.02	1.27	0.040	0.050

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
SPM5P02PE	SOP-8	 5P02 XXXX	3000PCS	7"

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