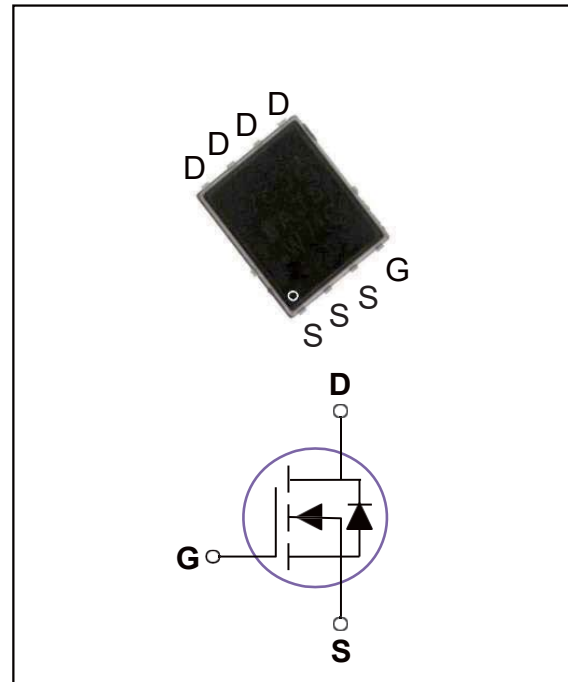


PPAK5X6 Pin Configuration

BVDSS	R _{DS(ON)}	I _D
65V	2.8mΩ	100A

<p>Features</p> <ul style="list-style-type: none"> ● 65V, 100A, R_{DS(ON)} = 2.8mΩ @ V_{GS} = 10V ● Improved dv/dt capability ● Fast switching ● 100% EAS Guaranteed ● Green Device Available <p>Applications</p> <ul style="list-style-type: none"> ● Networking ● Load Switch ● LED applications ● Quick Charger



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V _{DS}	65	V
Gate-Source Voltage	V _{GS}	+20/-12	V
Drain Current – Continuous (T _C =25°C)	I _D	100	A
Drain Current – Continuous (T _C =100°C)		63	A
Drain Current – Pulsed ¹	I _{DM}	400	A
Single Pulse Avalanche Energy ²	EAS	245	mJ
Single Pulse Avalanche Current ²	IAS	70	A
Power Dissipation (T _C =25°C)	P _D	142	W
Power Dissipation – Derate above 25°C		1.14	W/C
Storage Temperature Range	T _{STG}	-50 to 150	°C
Operating Junction Temperature Range	T _J	-50 to 150	°C

Thermal Characteristics

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance Junction to ambient	R _{θJA}	---	62	°C/W
Thermal Resistance Junction to Case	R _{θJC}	---	0.88	°C/W

MOSFET ELECTRICAL CHARACTERISTICS $T_A=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	65	---	---	V
BV_{DSS} Temperature Coefficient	$L; BV_{DSS}/L; T_J$	Reference to $25^{\circ}\text{C}, I_D=1\text{mA}$	---	0.05	---	V/C
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V, T_J=25^{\circ}\text{C}$	---	---	1	μA
		$V_{DS}=48V, V_{GS}=0V, T_J=85^{\circ}\text{C}$	---	---	10	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=20V, V_{DS}=0V$	---	---	100	nA

On Characteristics

Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=20A$	---	2.3	2.8	m Ω
		$V_{GS}=4.5V, I_D=10A$	---	4.2	5.4	m Ω
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	1	1.6	2.5	V
$V_{GS(th)}$ Temperature Coefficient	$L; V_{GS(th)}$		---	-5	---	mV/C
Forward Transconductance	g_{fs}	$V_{DS}=10V, I_D=5A$	---	11	---	S

Dynamic and switching Characteristics

Total Gate Charge ^{3,4}	Q_g	$V_{DS}=48V, V_{GS}=10V, I_D=10A$	---	59	120	nC
Gate-Source Charge ^{3,4}	Q_{gs}		---	10.4	20	
Gate-Drain Charge ^{3,4}	Q_{gd}		---	19.6	38	
Turn-On Delay Time ^{3,4}	$T_{d(on)}$	$V_{DD}=30V, V_{GS}=10V, R_G=6\Omega$ $I_D=1A$	---	22	44	ns
Rise Time ^{3,4}	T_r		---	14	28	
Turn-Off Delay Time ^{3,4}	$T_{d(off)}$		---	40	80	
Fall Time ^{3,4}	T_f		---	20	40	
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, F=1\text{MHz}$	---	4780	9500	pF
Output Capacitance	C_{oss}		---	1365	2700	
Reverse Transfer Capacitance	C_{rss}		---	51	102	
Gate resistance	R_g	$V_{GS}=0V, V_{DS}=0V, F=1\text{MHz}$	---	1.8	3.6	Ω

Drain-Source Diode Characteristics and Maximum Ratings

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Continuous Source Current	I_S	$V_G=V_D=0V, \text{Force Current}$	---	---	100	A
Pulsed Source Current	I_{SM}		---	---	200	A
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=1A, T_J=25^{\circ}\text{C}$	---	---	1	V

Note :

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
 $V_{DD}=25V, V_{GS}=10V, L=0.1\text{mH}, I_{AS}=70A, R_G=25\Omega, \text{Starting } T_J=25^{\circ}\text{C}.$
2. The data tested by pulsed , pulse width $\diamond 300\mu\text{s}$, duty cycle $\diamond 2\%$.
3. Essentially independent of operating temperature.

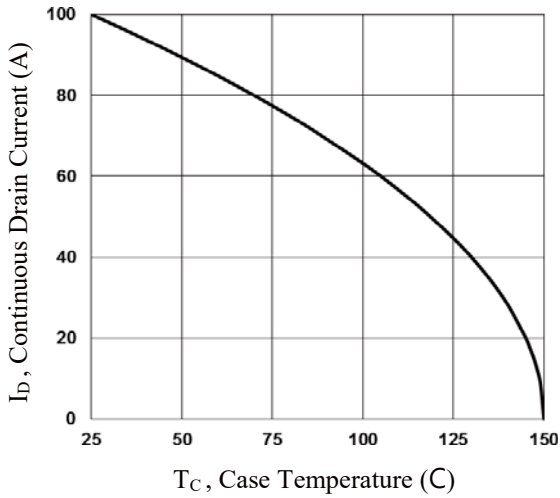
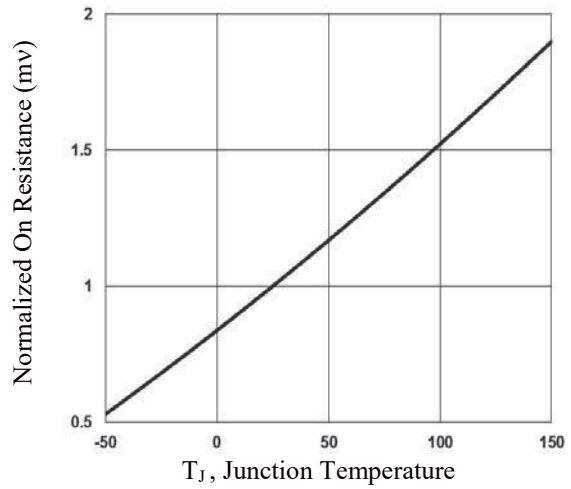
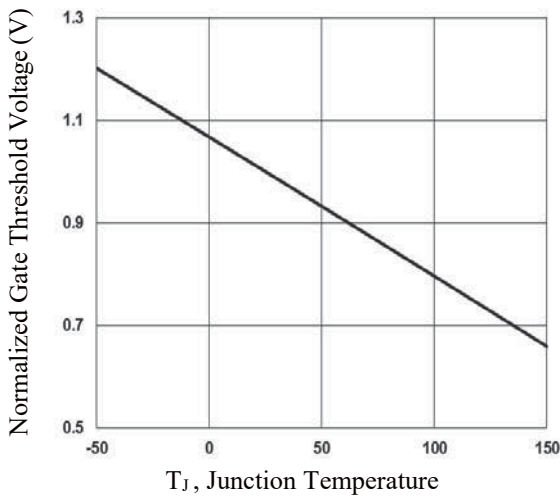


Fig.1 Continuous Drain Current vs. T_c



(C) Fig.2 Normalized $R_{DS(on)}$ vs. T_j



(C) Fig.3 Normalized V_{th} vs. T_j

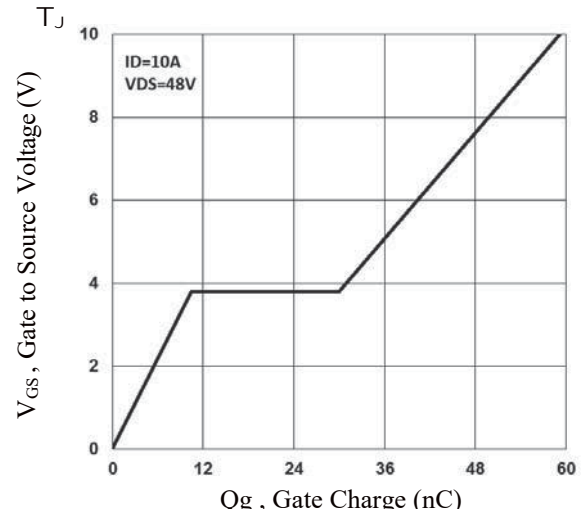


Fig.4 Gate Charge Characteristics

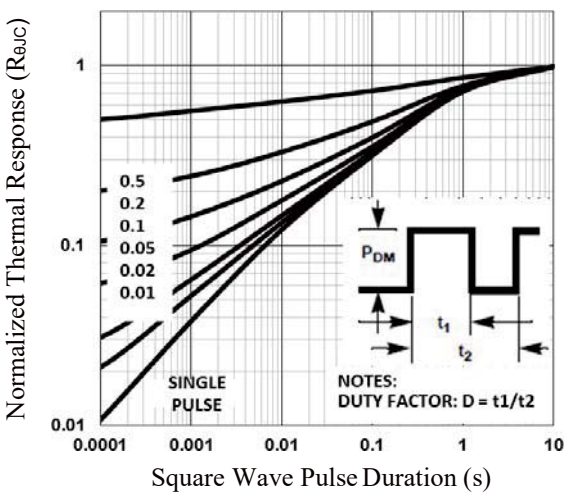


Fig.5 Normalized Transient Impedance

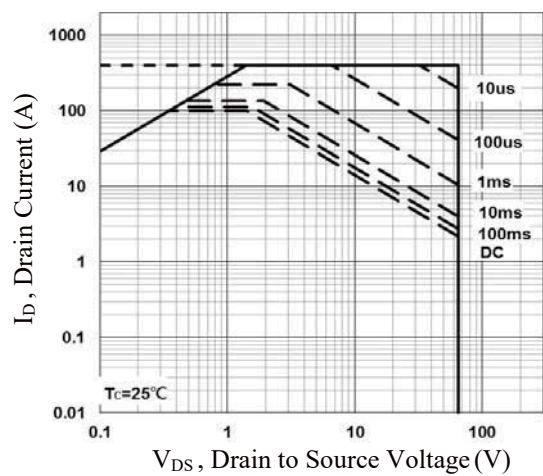


Fig.6 Maximum Safe Operation Area

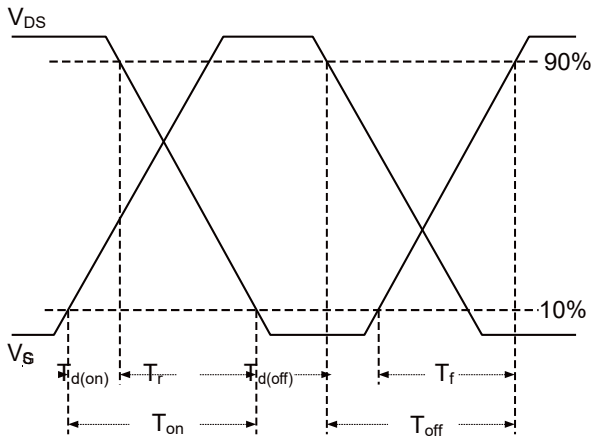


Fig.7 Switching Time Waveform

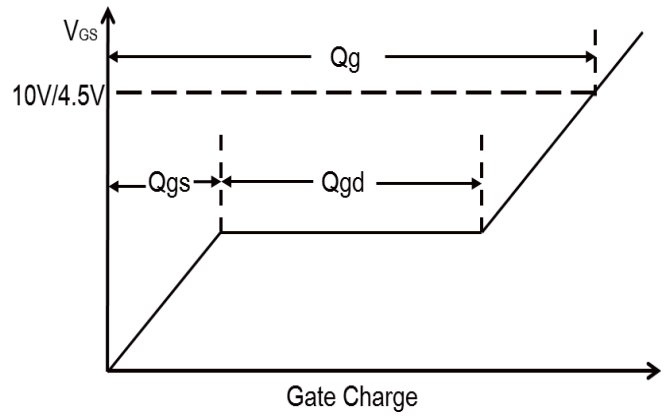
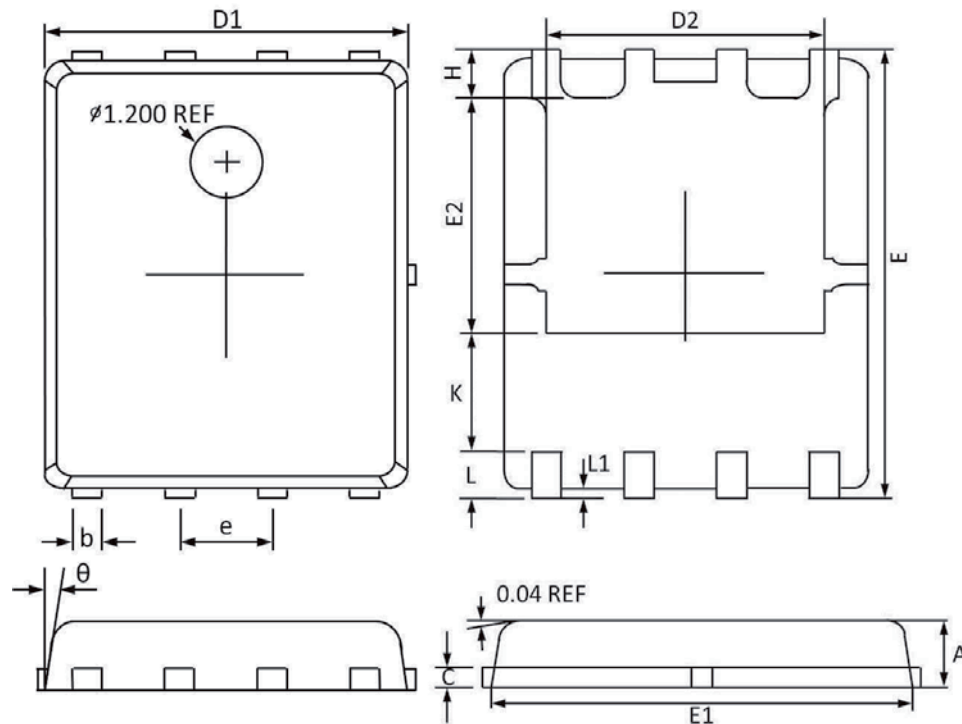


Fig.8 Gate Charge Waveform

PPAK5x6 PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MAX	MIN	MAX	MIN
A	1.100	0.800	0.043	0.031
b	0.510	0.330	0.020	0.013
C	0.300	0.200	0.012	0.008
D1	5.100	4.800	0.201	0.189
D2	4.100	3.610	0.161	0.142
E	6.200	5.900	0.244	0.232
E1	5.900	5.700	0.232	0.224
E2	3.780	3.350	0.149	0.132
e	1.27BSC		0.05BSC	
H	0.700	0.410	0.028	0.016
K	1.500	1.100	0.059	0.043
L	0.710	0.510	0.028	0.020
L1	0.200	0.060	0.008	0.002
θ	12°	0°	12°	0°