

Features

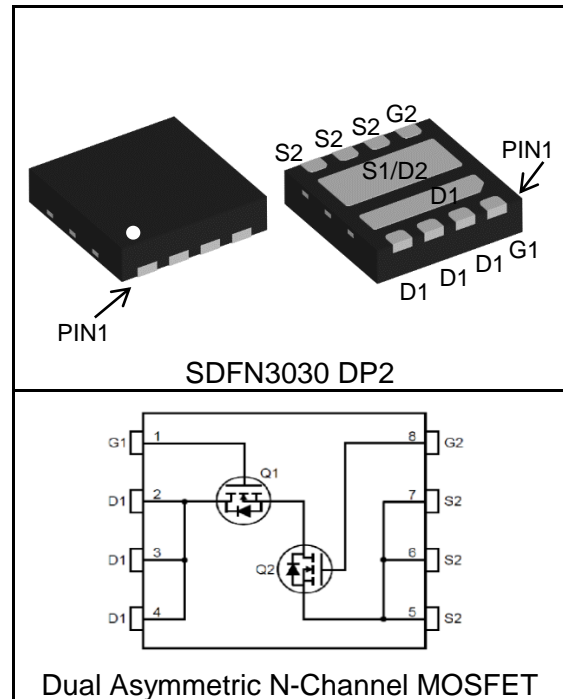
- Q1-Channel
30V/26A,
 $R_{DS(ON)} = 8m\Omega$ (Typ.) @ $V_{GS}=10V$
 $R_{DS(ON)} = 12m\Omega$ (Typ.) @ $V_{GS}=4.5V$
- Q2-Channel
30V/32A,
 $R_{DS(ON)} = 6m\Omega$ (Typ.) @ $V_{GS}=10V$
 $R_{DS(ON)} = 9m\Omega$ (Typ.) @ $V_{GS}=4.5V$
- Excellent $Q_G \times R_{DS(on)}$ product(FOM)
- SGT Technology

Applications

- DC/DC Converter



Pin Description



Absolute Maximum Ratings

Symbol	Parameter	Q1	Q2	Unit	
Common Ratings ($T_A=25^\circ\text{C}$ Unless Otherwise Noted)					
V_{DSS}	Drain-Source Voltage	30	30	V	
V_{GSS}	Gate-Source Voltage	± 20	± 20		
T_J	Maximum Junction Temperature	150	150	$^\circ\text{C}$	
T_{STG}	Storage Temperature Range	-55 to 150	-55 to 150	$^\circ\text{C}$	
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$	26	32	A
Mounted on Large Heat Sink					
$I_{DP}^{①}$	300 μs Pulse Drain Current Tested	$T_C=25^\circ\text{C}$	104	128	A
$I_D^{②}$	Continuous Drain Current @ T_C ($V_{GS}=\pm 10V$)	$T_C=25^\circ\text{C}$	26	32	A
		$T_C=100^\circ\text{C}$	16	20	
	Continuous Drain Current @ T_A ($V_{GS}=\pm 10V$) ^③	$T_A=25^\circ\text{C}$	11	12	
		$T_A=70^\circ\text{C}$	9	10	
P_D	Maximum Power Dissipation @ T_C	$T_C=25^\circ\text{C}$	16	19	W
		$T_C=100^\circ\text{C}$	6	8	
	Maximum Power Dissipation @ T_A ^③	$T_A=25^\circ\text{C}$	2.8	2.8	
		$T_A=70^\circ\text{C}$	1.8	1.8	
$R_{\theta JC}$	Thermal Resistance-Junction to Case	8	6.5	$^\circ\text{C/W}$	
$R_{\theta JA}^{③}$	Thermal Resistance-Junction to Ambient	45	45	$^\circ\text{C/W}$	
Drain-Source Avalanche Ratings					
$E_{AS}^{④}$	Avalanche Energy, Single Pulsed	9	16	mJ	

Electrical Characteristics ($T_A=25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Test Condition	KS3428UA3T			Unit		
			Min.	Typ.	Max.			
Static Characteristics								
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	Q1	30		V		
		V _{GS} =0V, I _{DS} =250μA	Q2	30				
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V	Q1		1	μA		
				T _J =125°C			30	
		V _{DS} =30V, V _{GS} =0V	Q2		1			
				T _J =125°C			30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	Q1	1.2	1.7	2.2	V	
		V _{DS} =V _{GS} , I _{DS} =250μA	Q2	1.2	1.7	2.2		
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	Q1			±100	nA	
		V _{GS} =±20V, V _{DS} =0V	Q2			±100		
R _{DS(ON)} ^⑤	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =13A	Q1		8	10	mΩ	
		V _{GS} =10V, I _{DS} =15A	Q2		6	8		
		V _{GS} =4.5V, I _{DS} =10A	Q1		12	16		
		V _{GS} =4.5V, I _{DS} =10A	Q2		9	12		
Diode Characteristics								
V _{SD} ^⑤	Diode Forward Voltage	I _{SD} =13A, V _{GS} =0V	Q1		0.86	1.2	V	
		I _{SD} =15A, V _{GS} =0V	Q2		0.88	1.2		
t _{rr}	Reverse Recovery Time	Q1-Channel I _{SD} =13A, di _{SD} /dt=100A/μs	Q1		9		ns	
			Q2		12			
Q _{rr}	Reverse Recovery Charge	Q2-Channel I _{SD} =15A, di _{SD} /dt=100A/μs	Q1		14		nC	
			Q2		17			
Dynamic Characteristics ^⑥								
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	Q1		1.1		Ω	
			Q2		1.2			
C _{iss}	Input Capacitance	Q1-Channel V _{GS} =0V, V _{DS} =15V, Frequency=1.0MHz	Q1		560		pF	
			Q2		690			
C _{oss}	Output Capacitance		Q2-Channel V _{GS} =0V, V _{DS} =15V, Frequency=1.0MHz	Q1		275		
				Q2		330		
C _{riss}	Reverse Transfer Capacitance	Q1-Channel V _{GS} =0V, V _{DS} =15V, Frequency=1.0MHz		Q1		25		
				Q2		35		

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Test Condition	KS3428UA3T			Unit	
			Min.	Typ.	Max.		
Dynamic Characteristics ^⑥							
$t_{d(ON)}$	Turn-on Delay Time	Q1-Channel $V_{DD}=15\text{V}$, $I_{DS}=13\text{A}$, $V_{GEN}=10\text{V}$, $R_G=3\Omega$ Q2-Channel $V_{DD}=15\text{V}$, $I_{DS}=15\text{A}$, $V_{GEN}=10\text{V}$, $R_G=3\Omega$	Q1		5		ns
			Q2		6		
t_r	Turn-on Rise Time		Q1		4		
			Q2		8		
$t_{d(OFF)}$	Turn-off Delay Time		Q1		19		
			Q2		23		
t_f	Turn-off Fall Time		Q1		4		
			Q2		7		
Gate Charge Characteristics ^⑥							
Q_g	Total Gate Charge	Q1-Channel $V_{DS}=15\text{V}$, $V_{GS}=10\text{V}$, $I_{DS}=13\text{A}$ Q2-Channel $V_{DS}=15\text{V}$, $V_{GS}=10\text{V}$, $I_{DS}=15\text{A}$	Q1		4.5		nC
			Q2		7.1		
Q_{gs}	Gate-Source Charge		Q1		2.4		
			Q2		2.2		
Q_{gd}	Gate-Drain Charge		Q1		1.6		
			Q2		3.1		

- Notes:
- ① Pulse width limited by safe operating area.
 - ② Calculated continuous current based on maximum allowable junction temperature.
 - ③ When mounted on 1 inch square copper board, $t \leq 10\text{sec}$. The value in any given application depends on the user's specific board design.
 - ④ Limited by T_{Jmax} . Starting $T_J = 25^{\circ}\text{C}$, Q1 Chanel: $L = 0.5\text{mH}$, $R_G = 25\Omega$, $I_{AS} = 6\text{A}$, $V_{GS} = 10\text{V}$, Q2-Chanel: $L = 0.5\text{mH}$, $R_G = 25\Omega$, $I_{AS} = 8\text{A}$, $V_{GS} = 10\text{V}$, Part not recommended for use above this value.
 - ⑤ Pulse test; Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
 - ⑥ Guaranteed by design, not subject to production testing.

Ordering and Marking Information

Device	Package	Packaging	Quantity	Reel Size	Tape width
KS3428UA3T	SDFN3030 DP2	Tape&Reel	5000	13"	12mm

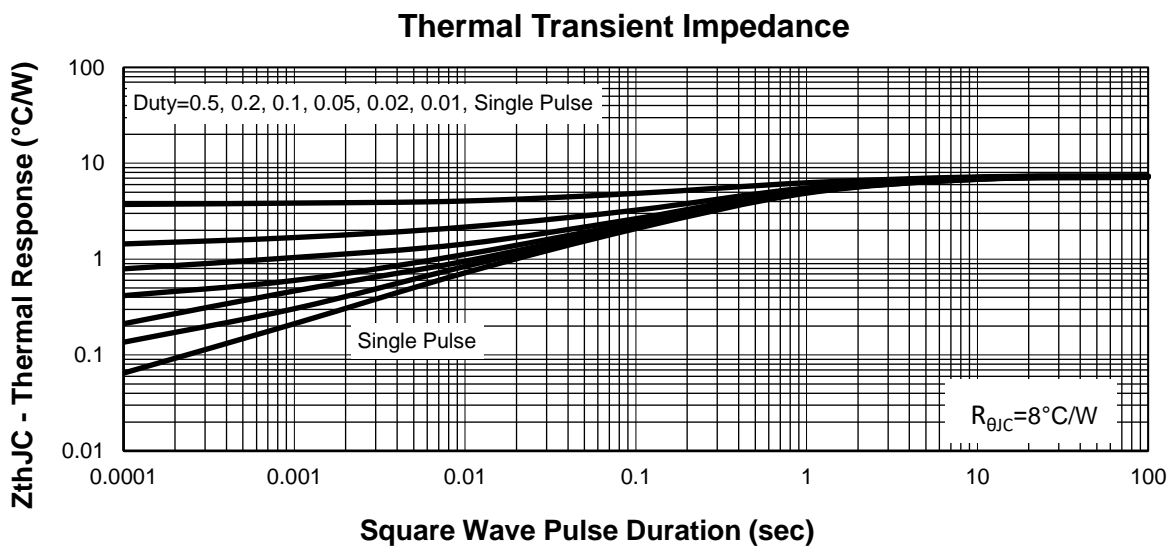
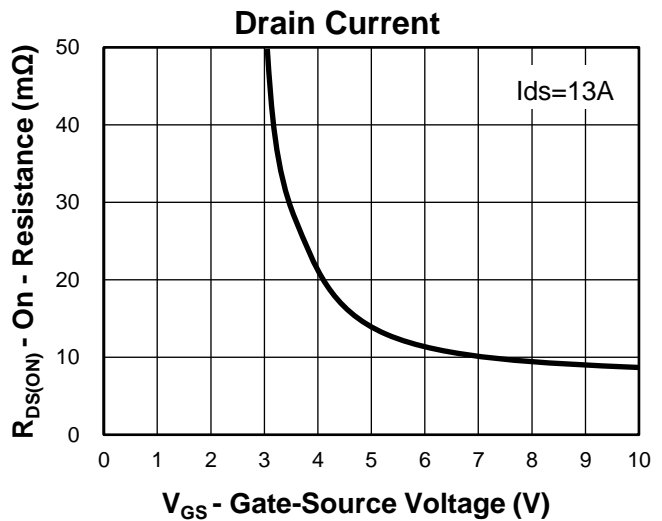
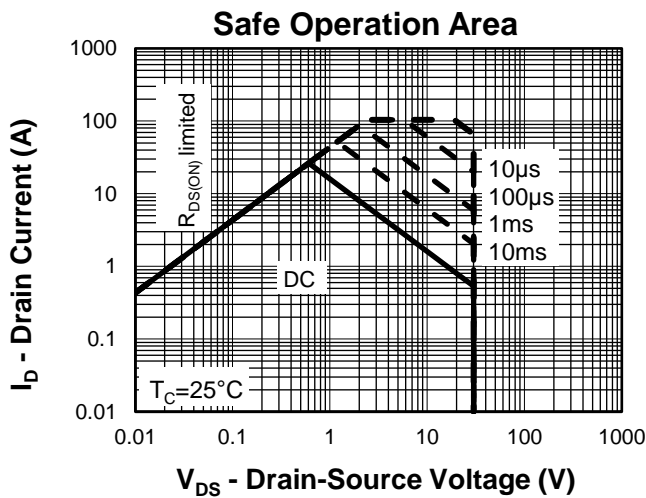
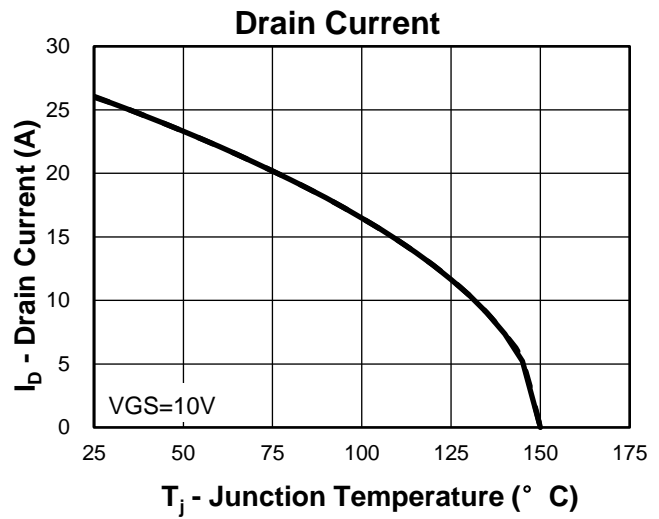
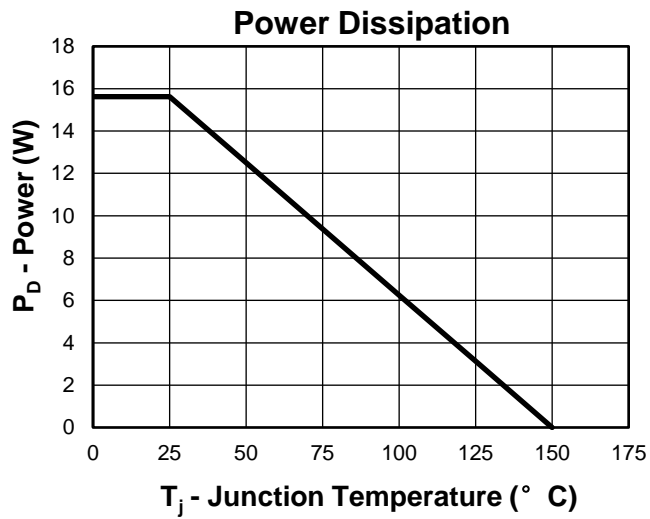


Y =Year,2017-A,2018-B,etc.

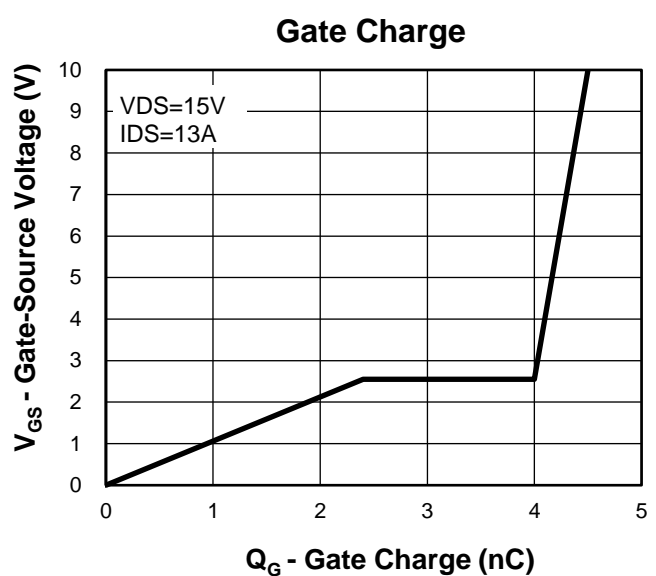
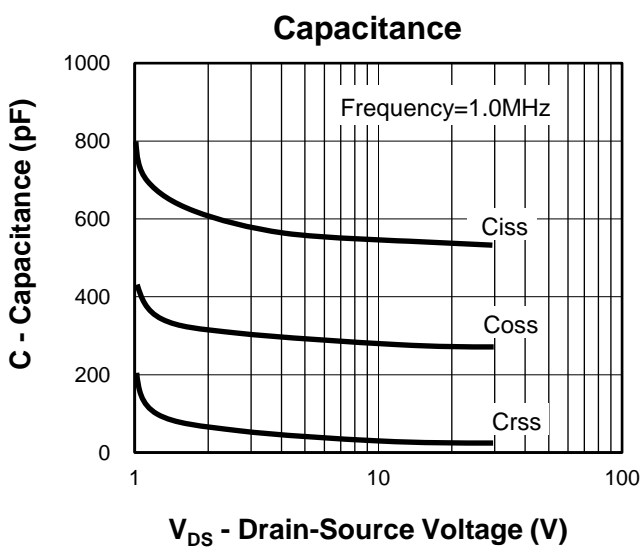
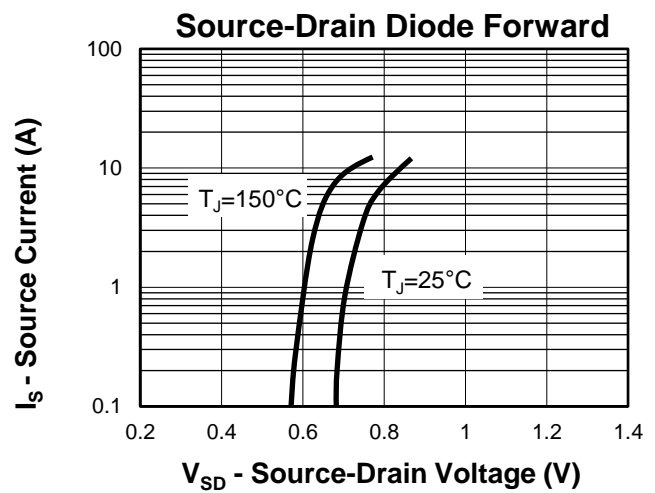
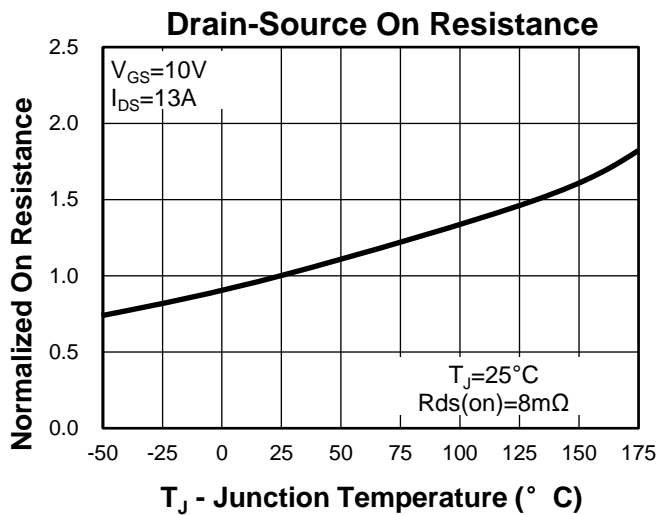
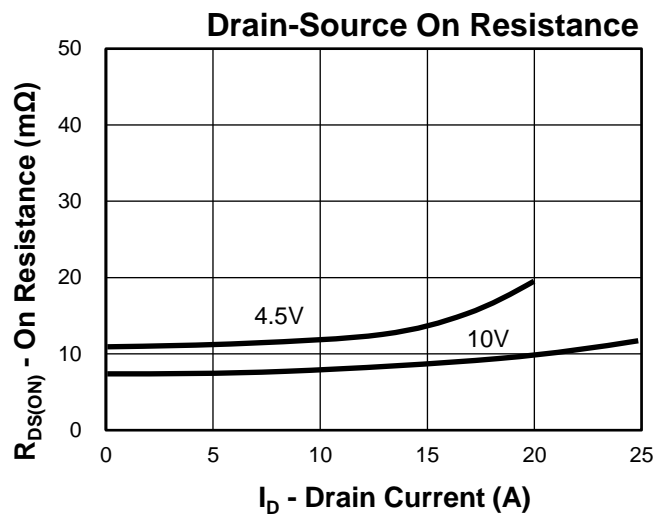
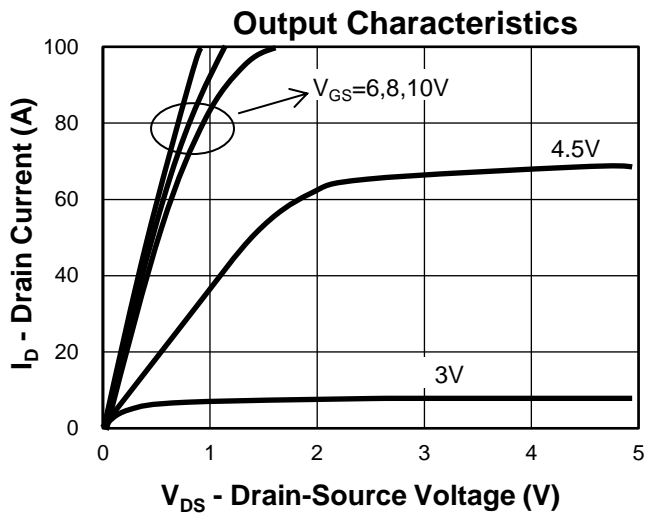
WW =Week.

XXX =Lot number.

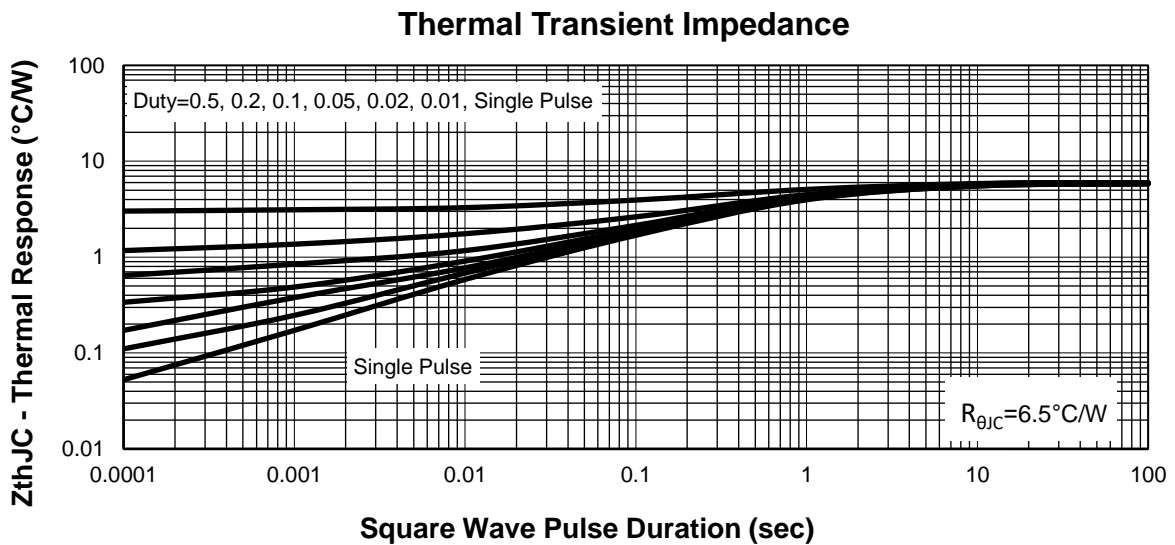
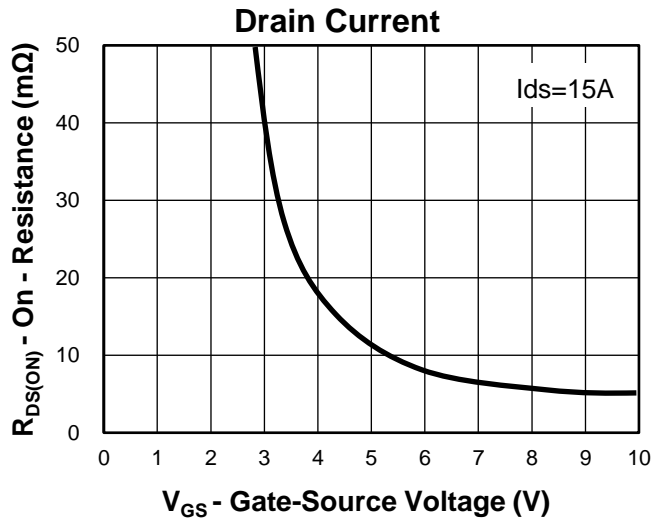
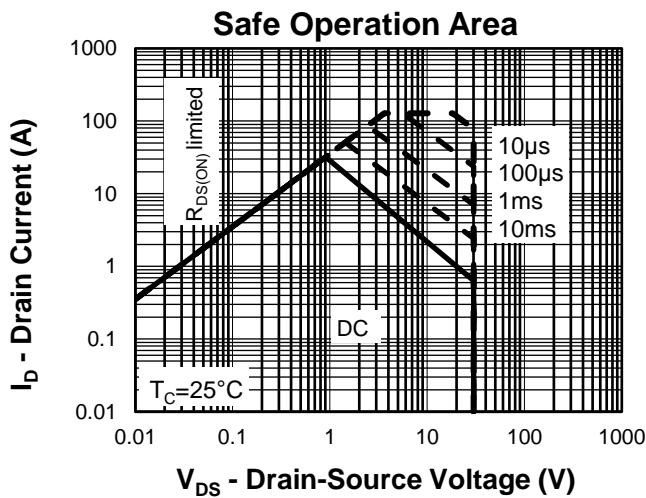
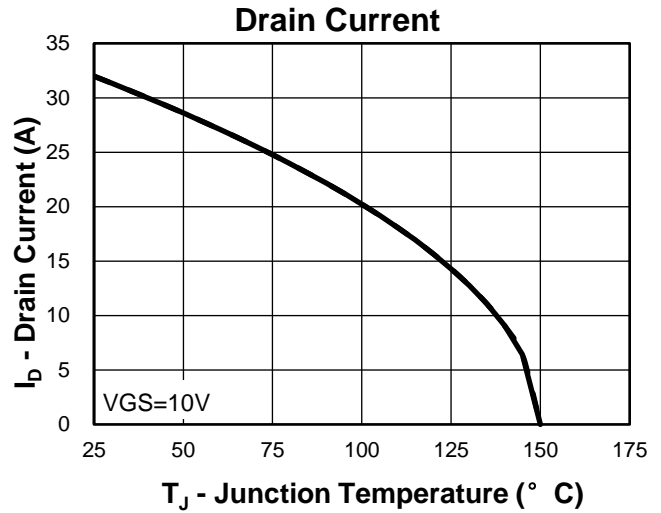
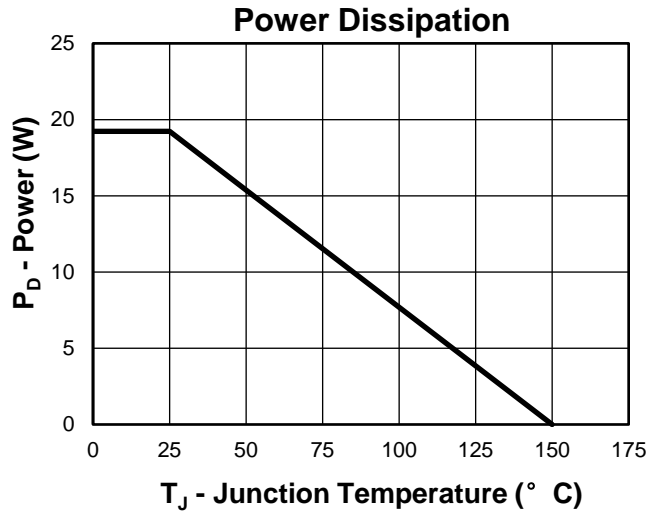
Typical Characteristics(Q1-Channel)



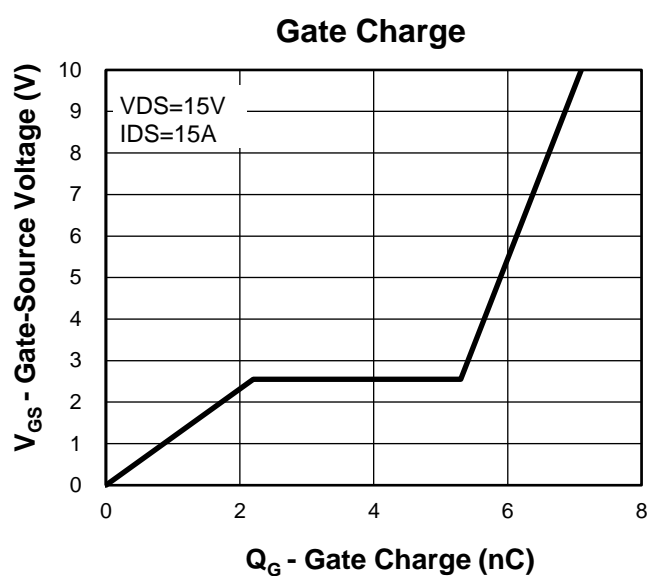
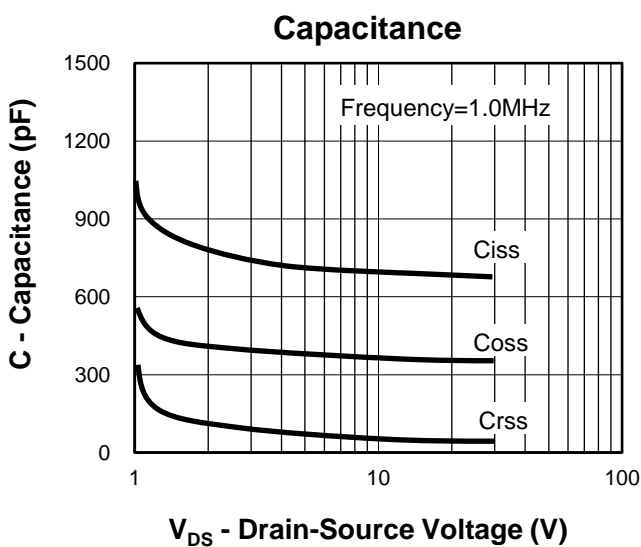
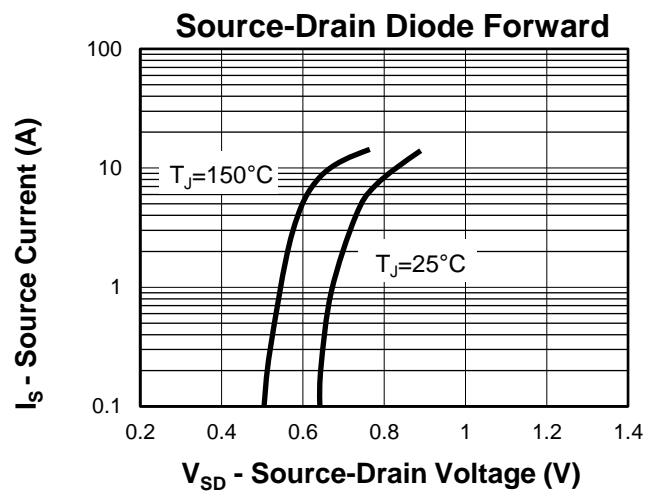
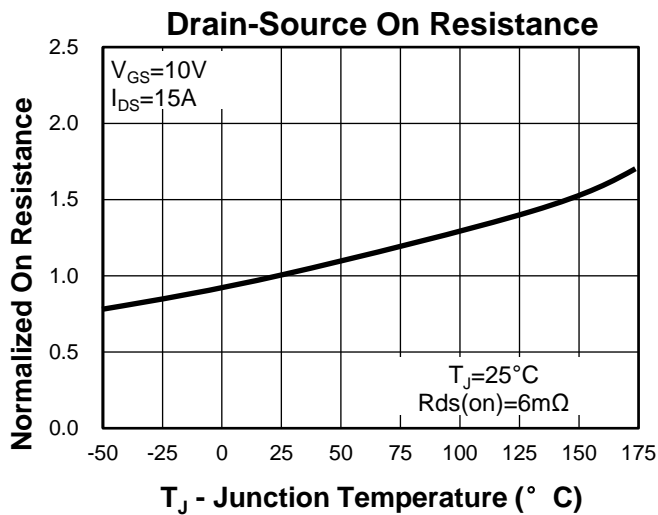
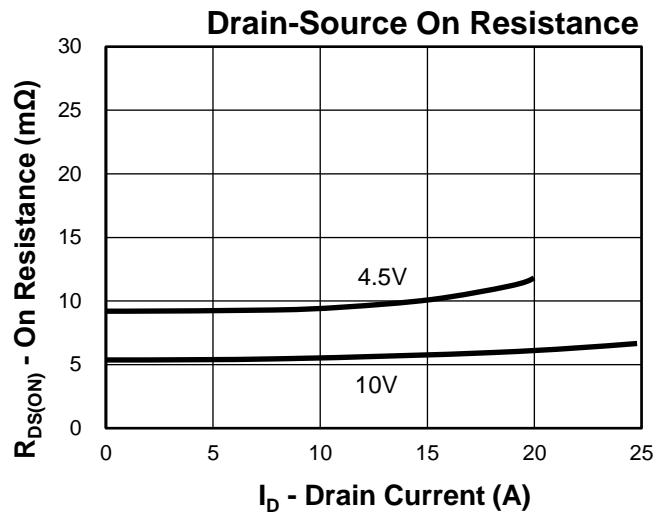
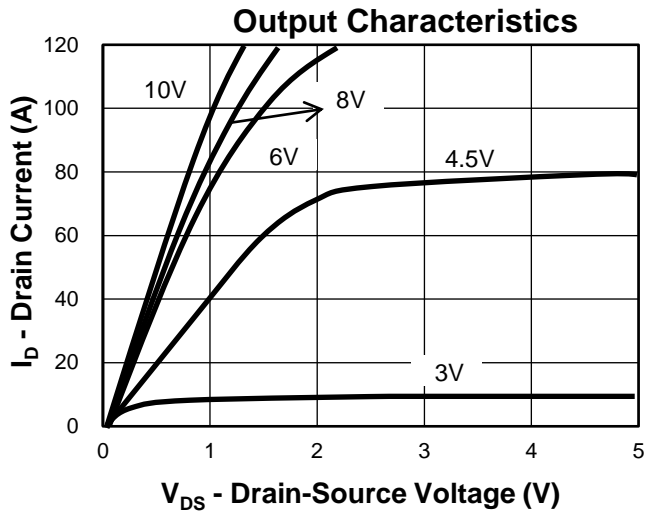
Typical Characteristics(Q1-Channel)

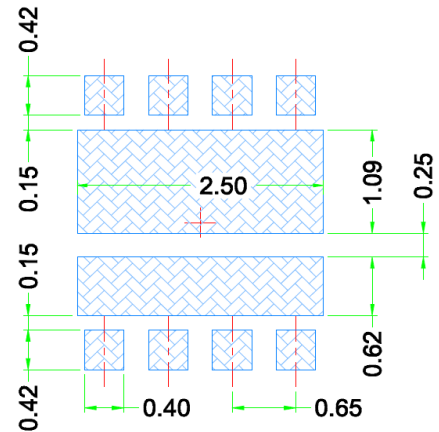
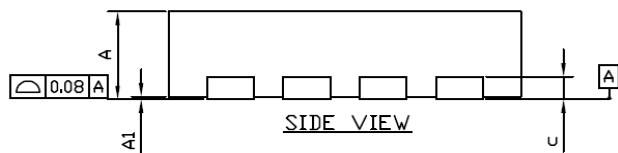
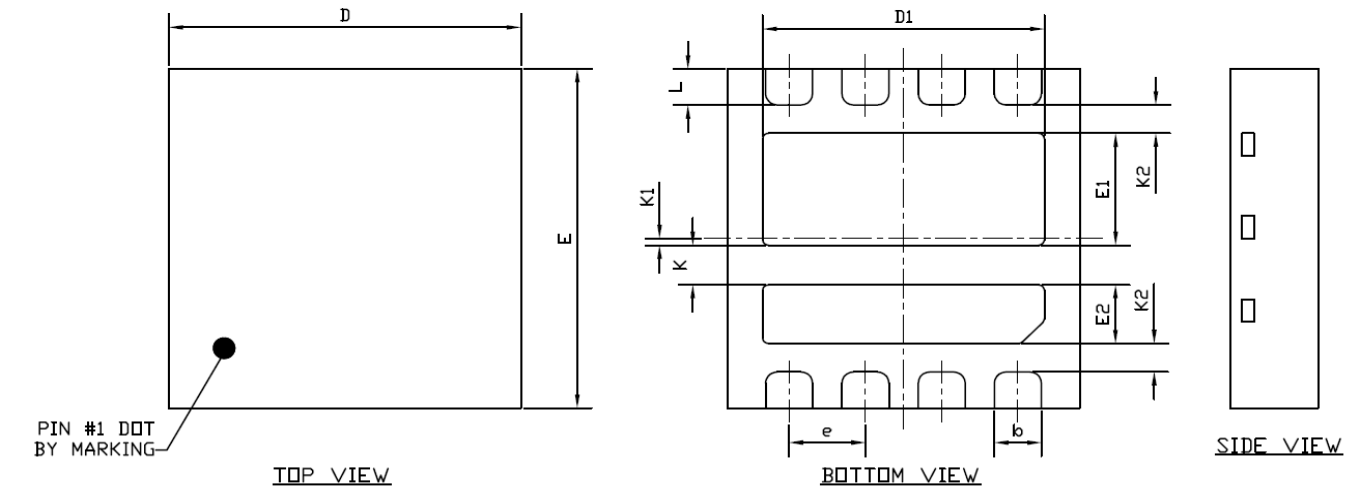


Typical Characteristics(Q2-Channel)



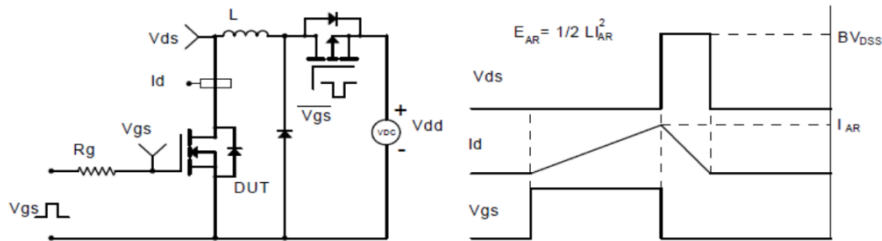
Typical Characteristics(Q2-Channel)



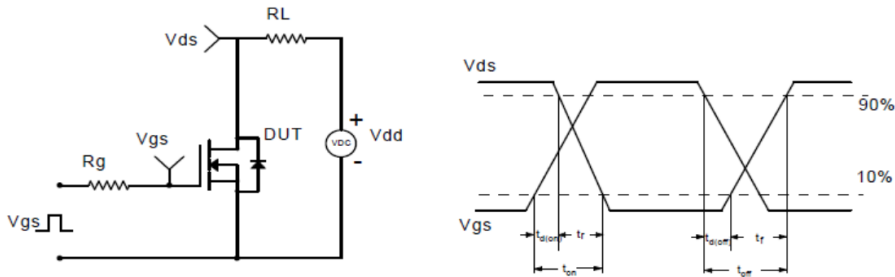
Package Information
SDFN3030 DP2


SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.70	0.75	0.80	0.028	0.030	0.031
A1	0.00		0.05	0.000		0.002
b	0.35	0.40	0.45	0.014	0.016	0.018
c	0.20 REF.			0.008 REF.		
D	2.90	3.00	3.10	0.114	0.118	0.122
D1	2.30	2.40	2.50	0.091	0.094	0.098
E	2.90	3.00	3.10	0.114	0.118	0.122
E1	0.89	0.99	1.09	0.035	0.039	0.043
E2	0.42	0.52	0.62	0.017	0.020	0.024
e	0.65 BSC			0.026 BSC		
L	0.27	0.32	0.35	0.011	0.013	0.014
K	0.35 REF.			0.014 REF.		
K1	0.06 REF.			0.002 REF.		
K2	0.25 REF.			0.010 REF.		

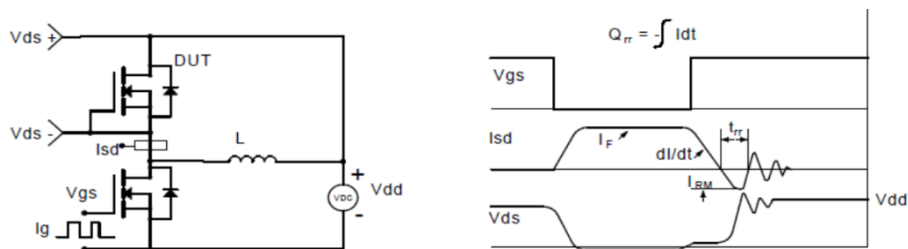
Avalanche Test Circuit and Waveforms



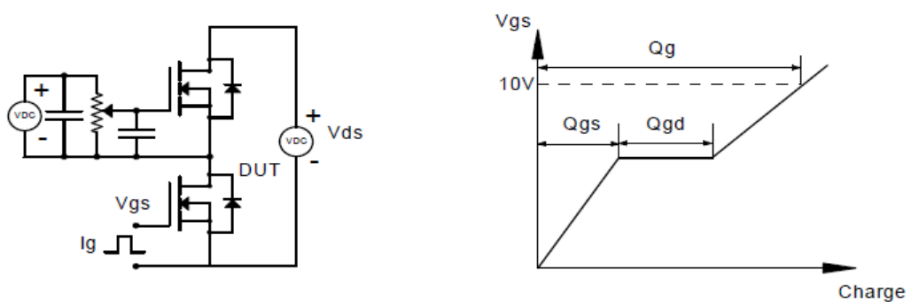
Switching Time Test Circuit and Waveforms



Diode Recovery Test Circuit and Waveforms



Gate Charge Test Circuit and Waveform



Customer Service

Kwansemi Semiconductor Co.,Ltd

Email:Sales@kwansemi.com

Web:www.kwansemi.com

DISCLAIMER:

Kwansemi reserves the right to change the specifications and circuitry without notice at any time. The Products are not designed for use in hostile environments, including, without limitation, aircraft, nuclear power generation, medical appliances, and devices or systems in which malfunction of any Product can reasonably be expected to result in a personal injury. Seller's customers using or selling Seller's products for use in such applications do so at their own risk and agree to fully defend and indemnify Seller.