

RoHS Compliant Product
 A suffix of "-C" specifies halogen and lead-free

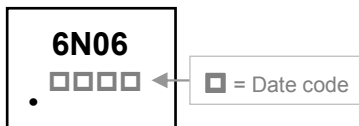
DESCRIPTION

The SDT6N06-C is the highest performance trench N-ch MOSFETs with extreme high cell density, which provide excellent R_{DS(ON)} and gate charge for most of the synchronous buck converter applications. The SDT6N06-C meet the RoHS and Green Product requirement with full function reliability approved.

FEATURES

- Advanced high cell density Trench technology
- Super Low Gate Charge
- Green Device Available

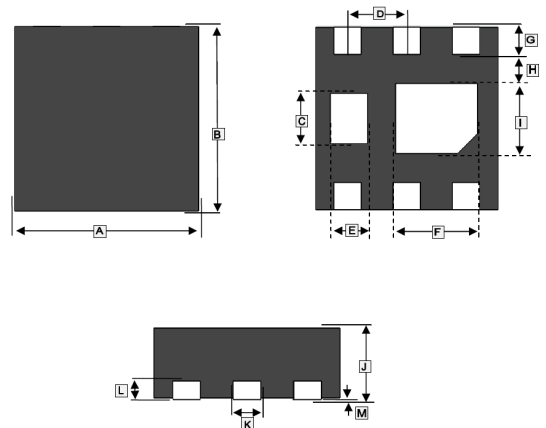
MARKING



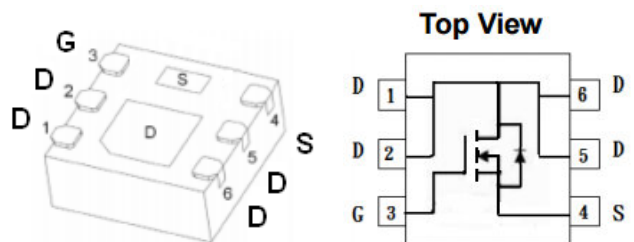
PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN2x2-6J	3K	7 inch

DFN2x2-6J



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.924	2.076	H	0.20	-
B	1.924	2.076	I	0.85	1.05
C	0.46	0.66	J	0.70	0.90
D	0.65 TYP.		K	0.20	0.40
E	0.20	0.40	L	0.203REF	
F	0.80	1.00	M	0.00	0.05
G	0.174	0.326			



ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current @V _{GS} =10V ¹	I _D	T _A =25°C	6
		T _A =70°C	4.8
Pulsed Drain Current ³	I _{DM}	24	A
Power Dissipation	P _D	2.4	W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55~150	°C
Thermal Resistance Rating			
Thermal Resistance from Junction to Ambient ¹	R _{θJA}	t ≤ 10sec, 52	°C / W
		Steady State, 80	
Thermal Resistance from Junction to Ambient ²		250	

ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

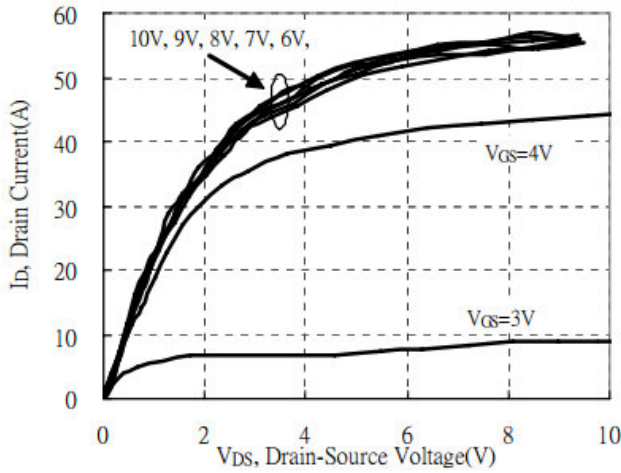
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Drain-Source Breakdown Voltage	BV _{DSS}	60	-	-	V	V _{GS} =0, I _D =250μA
Gate-Threshold Voltage	V _{GS(th)}	1	-	2.5	V	V _{DS} =V _{GS} , I _D =250μA
Forward Transfer conductance	g _{fs}	-	11	-	S	V _{DS} =5V, I _D =6A
Gate-Source Leakage Current	I _{GSS}	-	-	±100	nA	V _{DS} =0, V _{GS} = ±20V
Drain-Source Leakage Current	I _{DSS}	-	-	1	μA	V _{DS} =48V, V _{GS} =0, T _J =25°C
		-	-	30		V _{DS} =48V, V _{GS} =0, T _J =85°C
Drain-Source On-Resistance ⁴	R _{DS(ON)}	-	-	44	mΩ	V _{GS} =10V, I _D =6A
		-	-	52		V _{GS} =4.5V, I _D =4A
Total Gate Charge	Q _g	-	14	-	nC	V _{DS} =30V V _{GS} =10V I _D =6A
Gate-Source Charge	Q _{gs}	-	3.7	-		
Gate-Drain Charge	Q _{gd}	-	4.9	-		
Turn-On Delay Time	T _{d(on)}	-	12	-	nS	V _{DS} =30V V _{GS} =10V I _D =1A R _G =6Ω
Rise Time	T _r	-	6	-		
Turn-Off Delay Time	T _{d(off)}	-	34	-		
Fall Time	T _f	-	12	-		
Input Capacitance	C _{iss}	-	1160	-	pF	V _{DS} =30V V _{GS} =0 f=1MHz
Output Capacitance	C _{oss}	-	44	-		
Reverse Transfer Capacitance	C _{rss}	-	33	-		
Source-Drain Diode						
Continuous Source Current ¹	I _S	-	-	6	A	
Pulsed Source Current ³	I _{SM}	-	-	24	A	
Forward On Voltage ⁴	V _{SD}	-	-	1.2	V	I _S =1A, V _{GS} =0V
Reverse Recovery Time	t _{rr}	-	16	-	nS	I _F =5A, dI/dt=100A/μs, T _J =25°C
Reverse Recovery Charge	Q _{rr}	-	8	-	nC	

Notes:

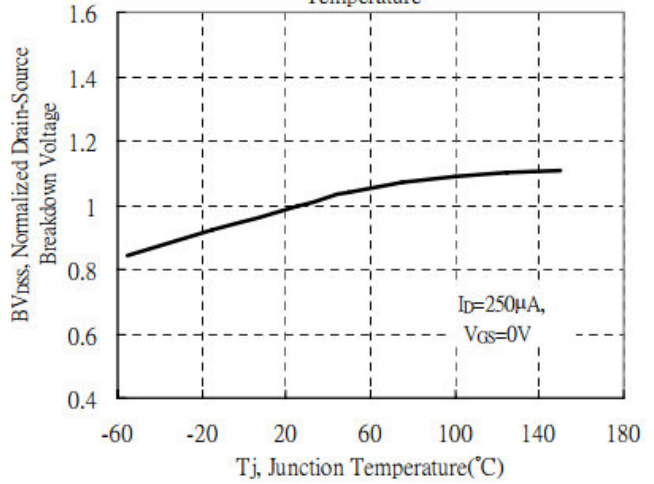
1. Surface Mounted on 1" x 1" FR4 Board with 2OZ copper.
2. When mounted on minimum pad of 2 oz. copper.
3. Pulse width limited by maximum junction temperature.
4. Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%.

TYPICAL CHARACTERISTIC CURVE

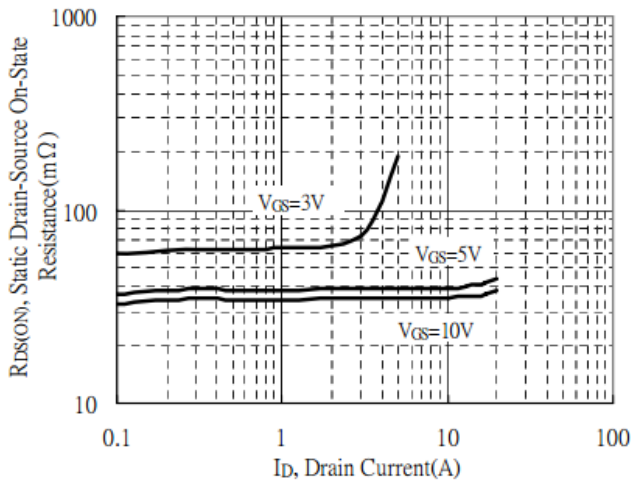
Typical Output Characteristics



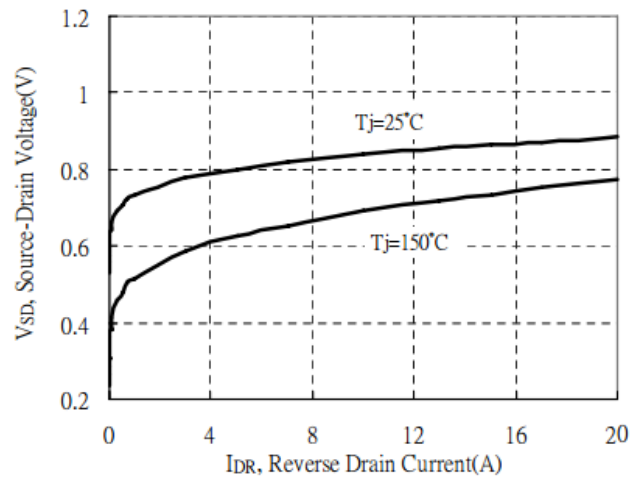
Normalized Brekdown Voltage vs Ambient Temperature



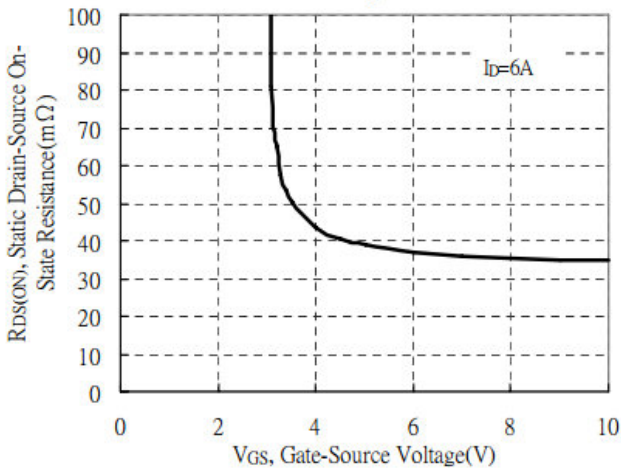
Static Drain-Source On-State resistance vs Drain Current



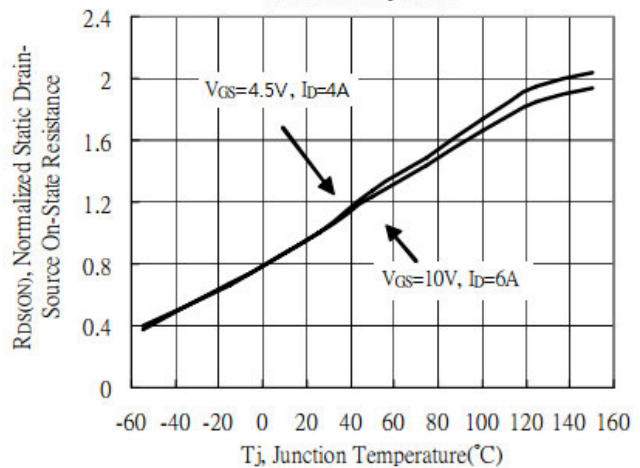
Reverse Drain Current vs Source-Drain Voltage



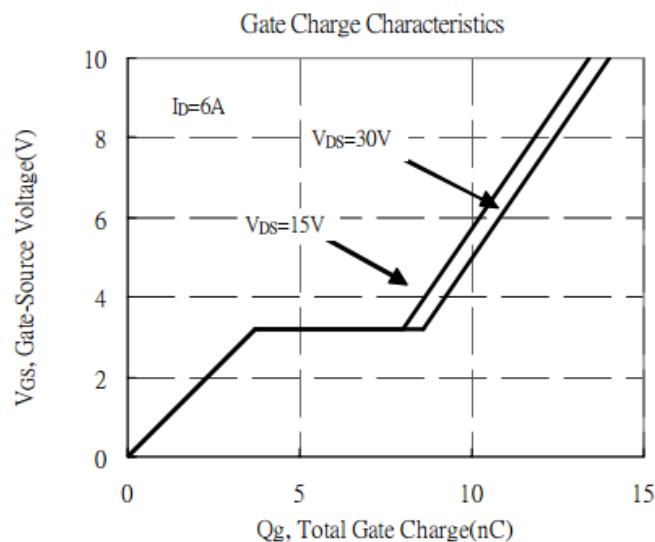
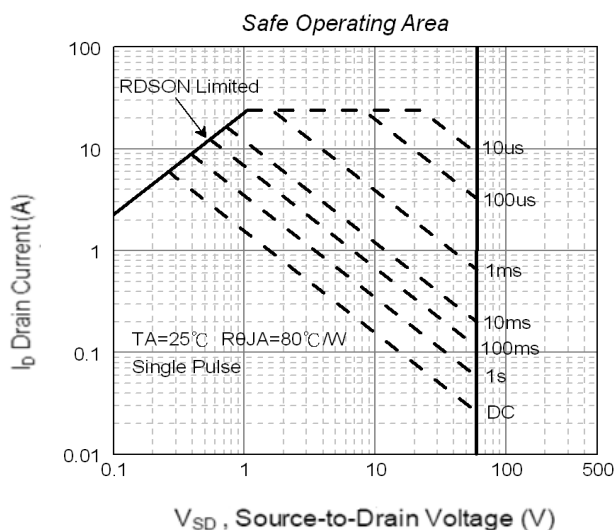
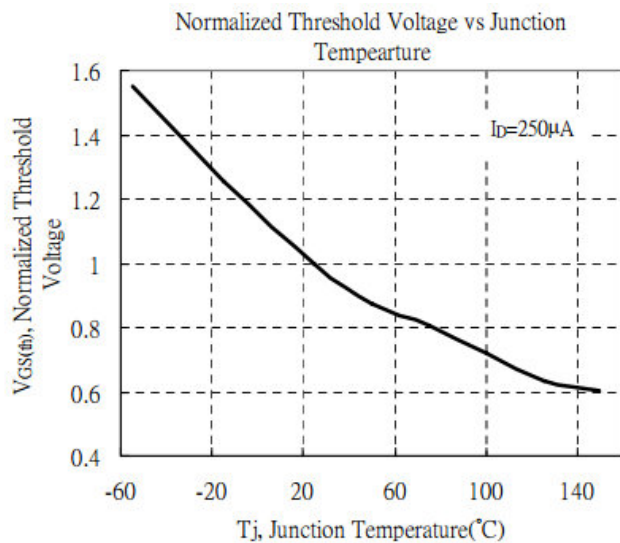
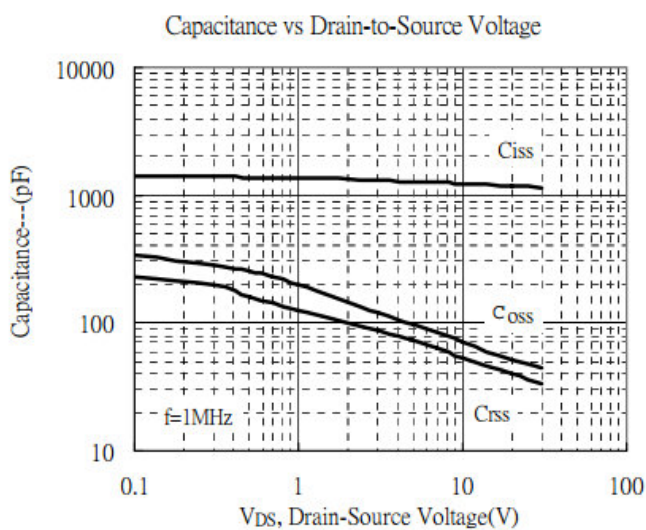
Static Drain-Source On-State Resistance vs Gate-Source Voltage



Normalized Drain-Source On-State Resistance vs Junction Temperature



TYPICAL CHARACTERISTIC CURVE



Normalized Maximum Transient Thermal Impedance

