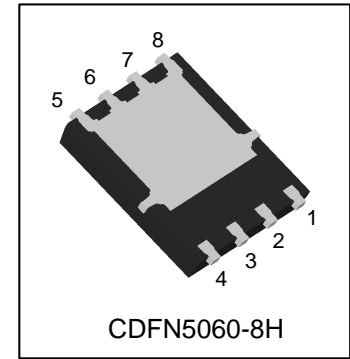


LN73013SDT3WG

30V N-Channel Power MOSFET



1. FEATURES

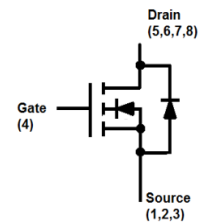
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- Power Tools
- UPS
- Motor Control

3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
LN73013SDT3WG	LN73013S	5000/Tape&Reel



4. MAXIMUM RATINGS

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDS	30	V
Gate-to-Source Voltage		VGS	± 20	V
Continuous Drain Current(Note 1)	TA =25°C	ID	40	A
	TA =100°C		25	
Pulsed Drain Current(Note 2)	TA =25°C	IDM	160	
Continuous Drain Current	TC =25°C	ID	155	A
	TC =100°C		100	
Pulsed Drain Current	TC =25°C	IDM	620	
Avalanche Current		IAS	40	A
Avalanche energy(L=0.1mH)		EAS	80	mJ
Power Dissipation(Note 1)	TA =25°C	PD	2.7	W
	TA =100°C		1.1	
Power Dissipation	TC =25°C		125	
	TC =100°C		50	
Operating Junction and Storage Temperature Range		TJ , TSTG	-55~+150	°C

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Junction-to-Ambient(Note 1)	RθJA	45	°C/W
Junction-to-Case	RθJC	1	

Note:1.Surface mounted on "1.5in x 1.5in" FR4 board using 1*1 in pad, 2 oz Cu.

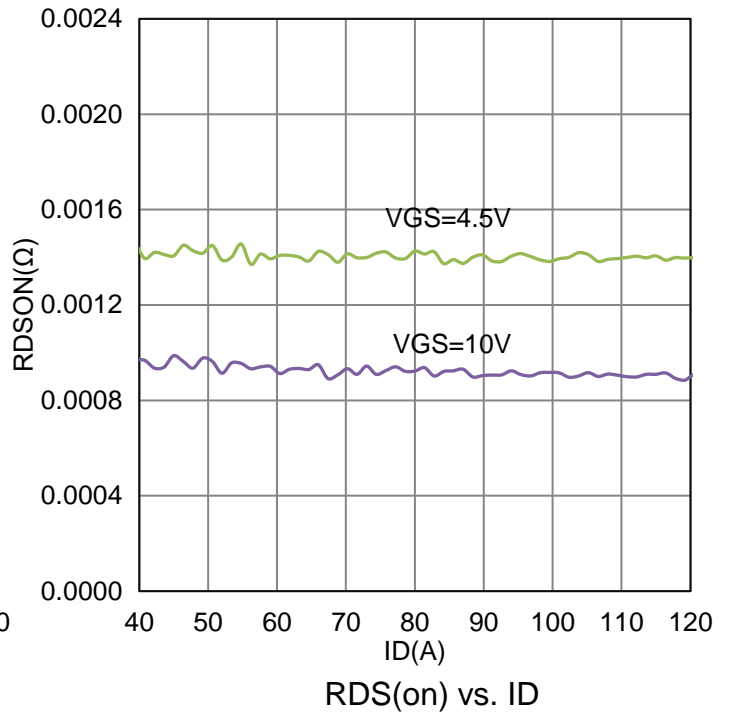
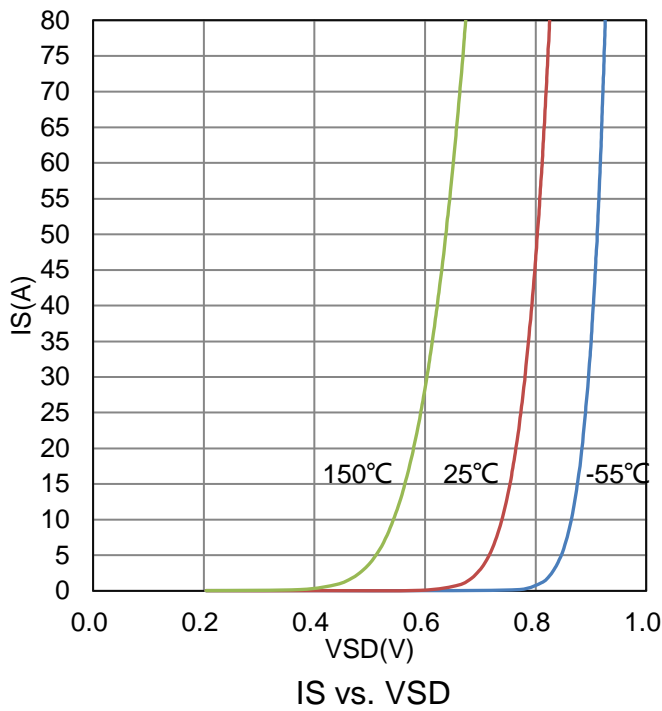
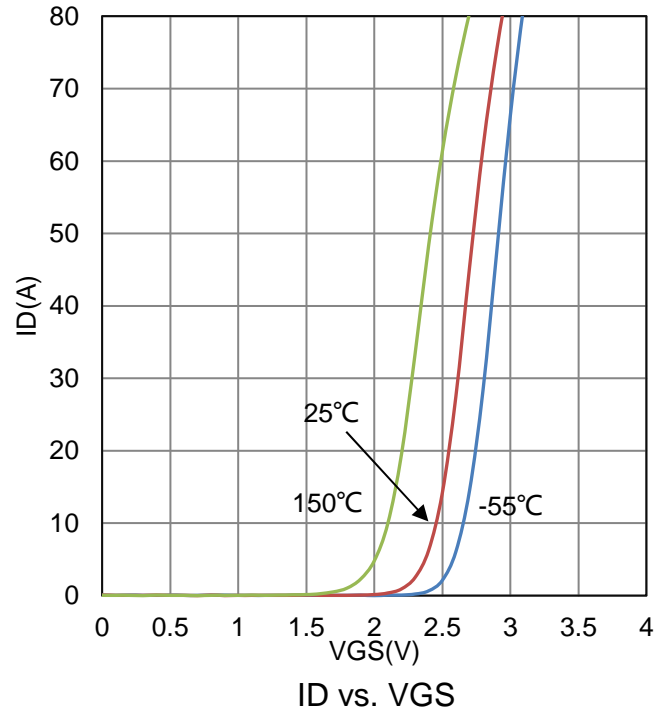
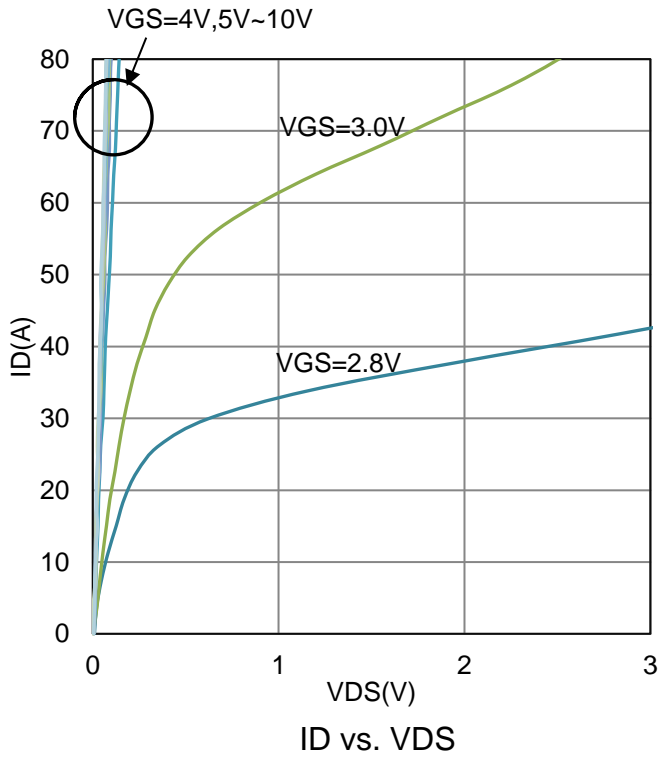
2.Pulse width limited by maximum junction temperature.

6. ELECTRICAL CHARACTERISTICS

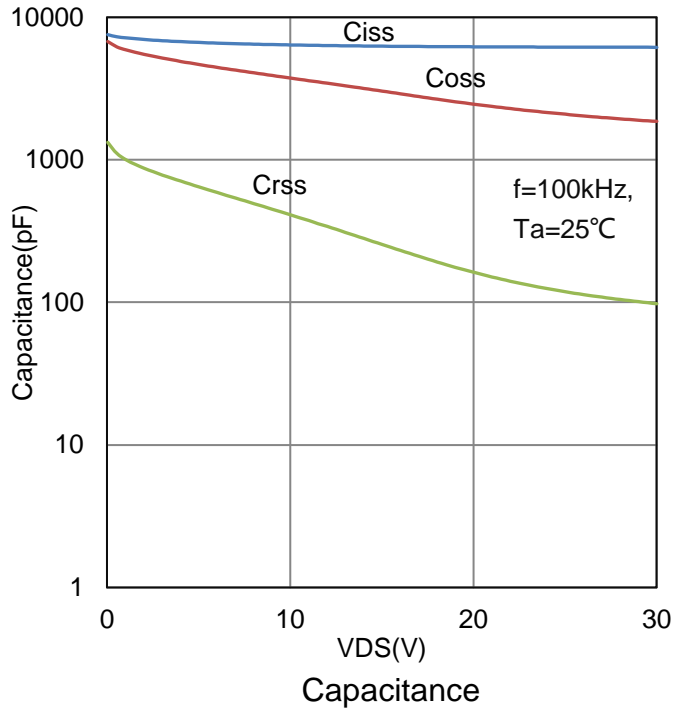
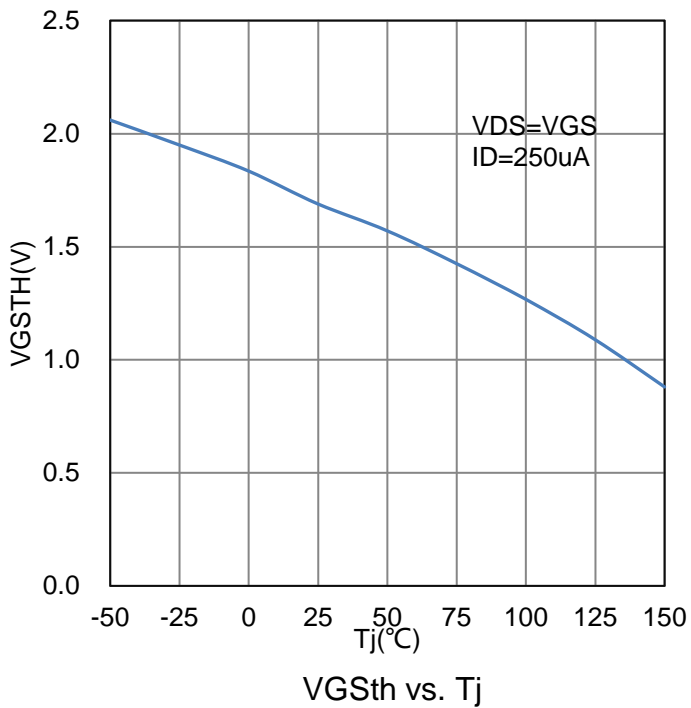
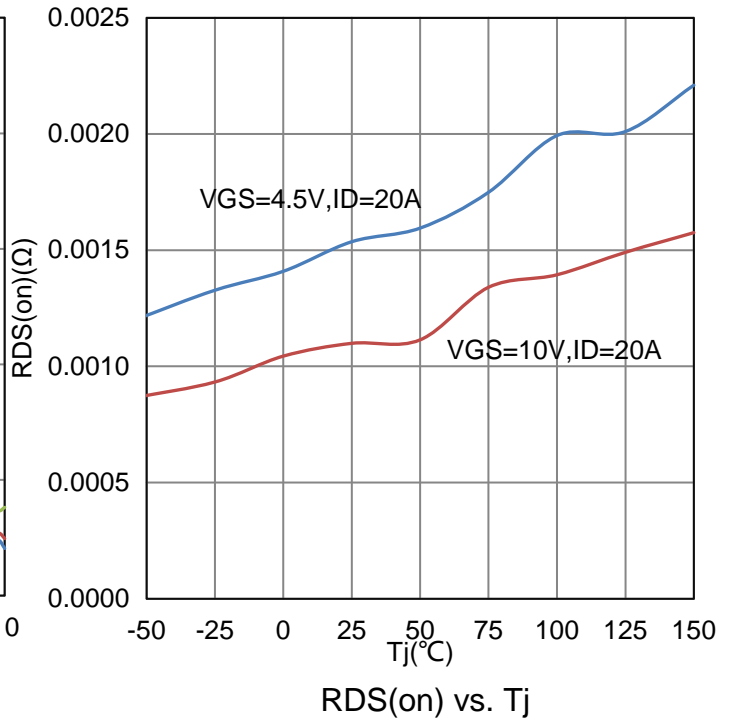
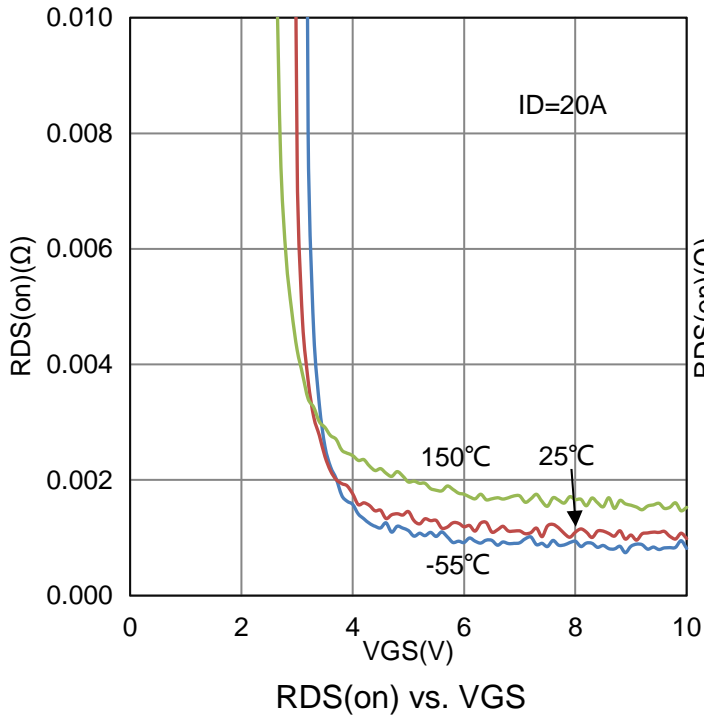
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain to Source Breakdown Voltage (VGS = 0 V, ID = 250 μ A)	BVDSS	30	-	-	V
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μ A)	VGS(th)	1.3	1.8	2.3	V
Gate-Body Leakage (VDS = 0 V, VGS = \pm 20 V)	IGSS	-	-	\pm 100	nA
Zero Gate Voltage Drain Current (VDS = 30 V, VGS = 0 V)	IDSS	-	-	1	μ A
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 20 A) (VGS = 4.5 V, ID = 20 A)	RDS(on)	- -	0.95 1.35	1.15 1.7	m Ω
Dynamic					
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 100KHz)	Ciss	-	6405	pF
Output Capacitance		Coss	-	3169	
Reverse Transfer Capacitance		Crss	-	287	
Total Gate Charge	(VDS = 15 V, VGS = 10 V, ID = 20 A)	Qg	-	102	nC
Gate-Source Charge		Qgs	-	19	
Gate-Drain Charge		Qgd	-	16	
Turn-On Delay Time	(VDS = 15 V, ID = 20 A, VGS = 10 V, RG = 6 Ω)	td(on)	-	29	ns
Rise Time		tr	-	20	
Turn-Off Delay Time		td(off)	-	155	
Fall Time		tf	-	60	
Diode characteristics					
Continuous Current TC=25 $^{\circ}$ C	IS	-	-	155	A
Plused Current TC=25 $^{\circ}$ C	ISM	-	-	620	A
Diode Forward Voltage (IS = 10 A, VGS = 0 V)	VSD	-	-	1.4	V

3.Pulse test: PW \leq 300us duty cycle \leq 2%.

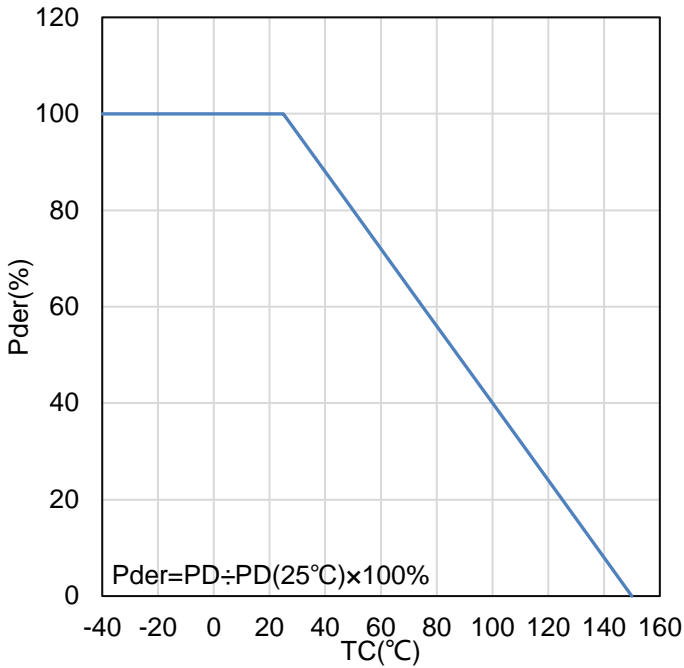
7. ELECTRICAL CHARACTERISTICS CURVES



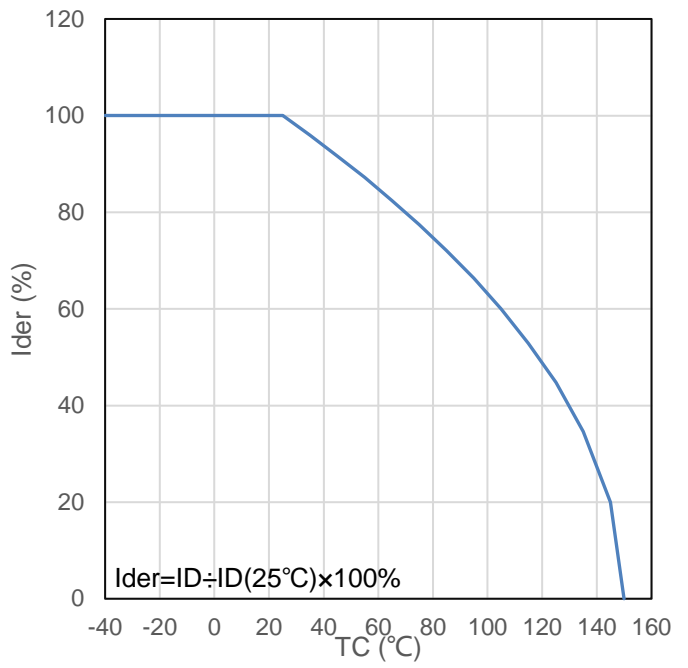
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



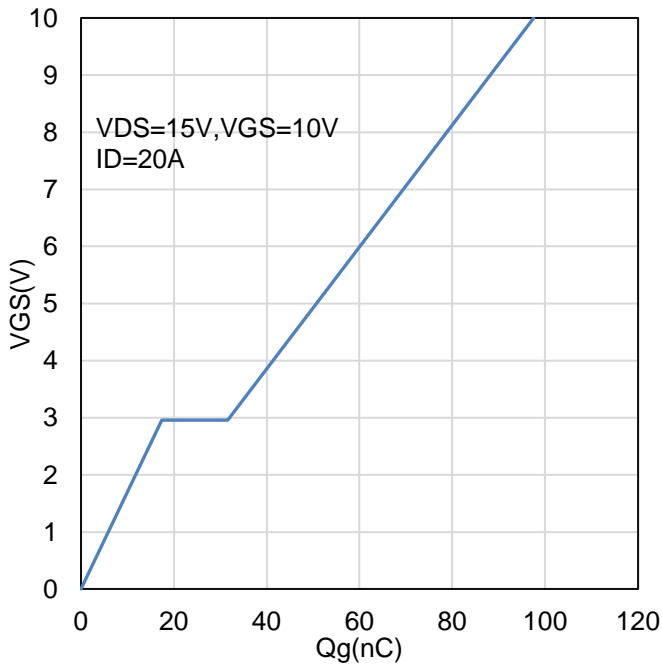
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



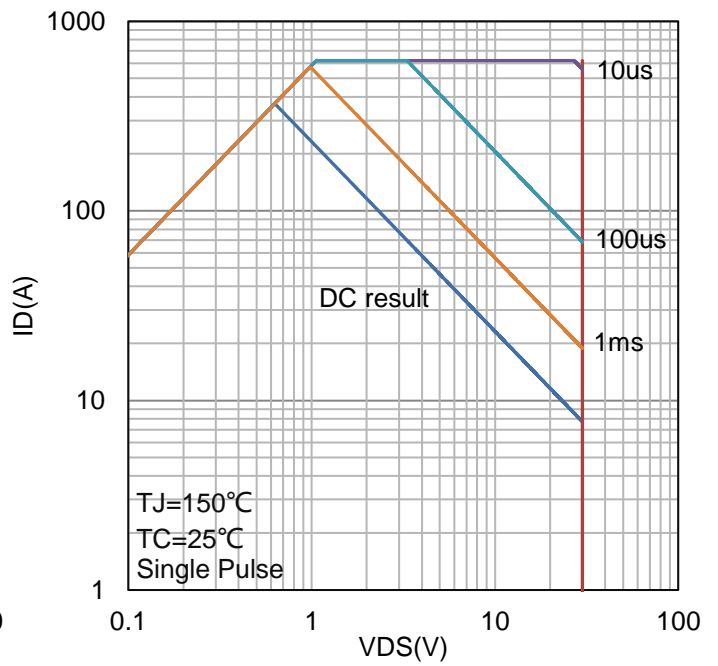
Normalized Derating Curve



Normalized drain Current

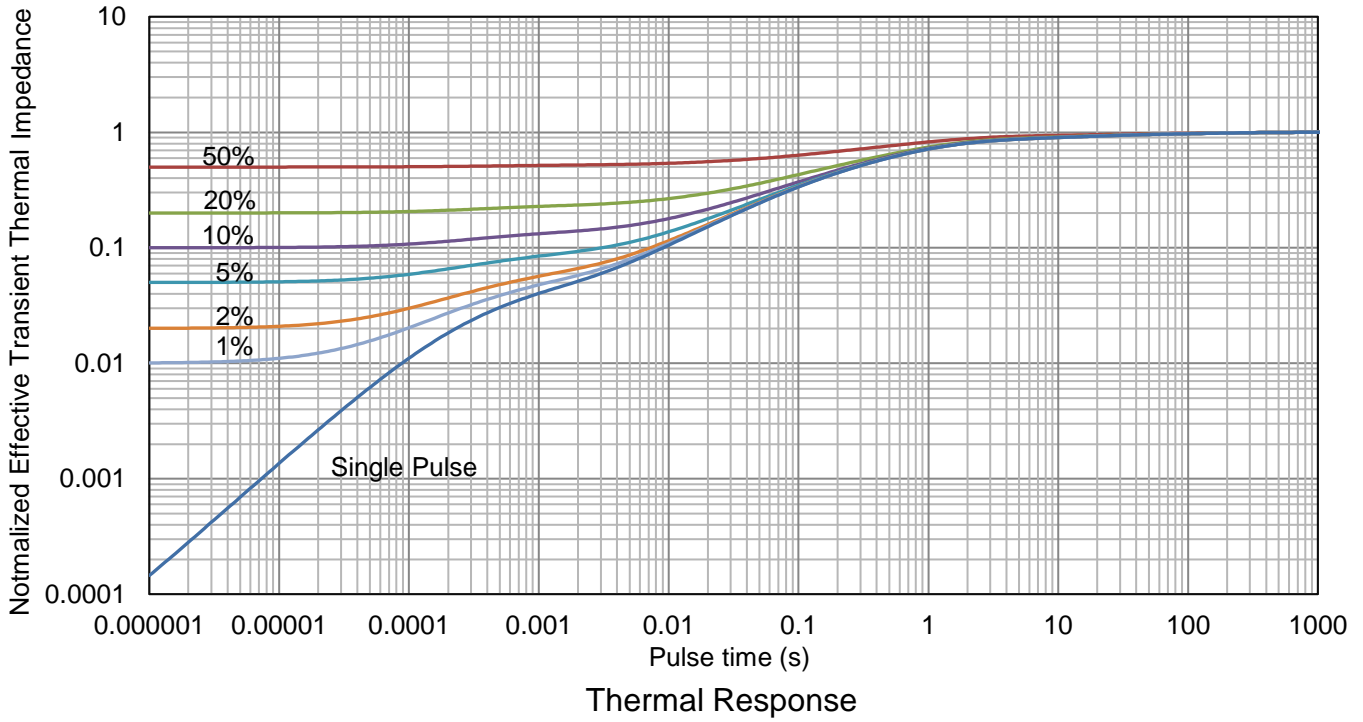


VGS vs. Qg



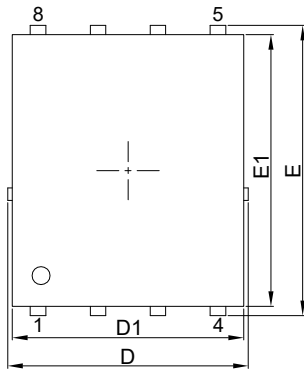
Safe Operating Area

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

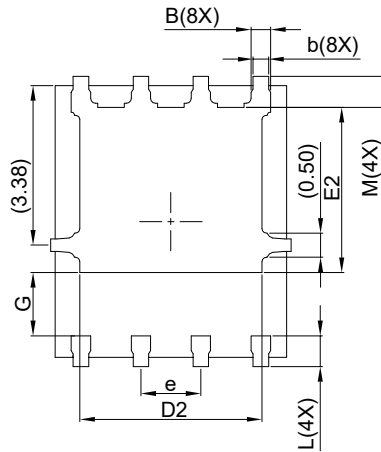


8. OUTLINE AND DIMENSIONS

CDFN5060-8H(T1.00)

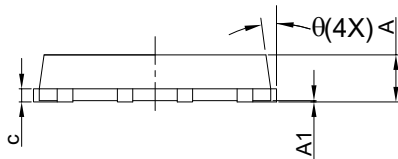


TOP VIEW



BOTTOM VIEW

DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.00	0.02	0.05
E	6.00	6.15	6.30
E1	5.66	5.76	5.86
E2	3.40	3.50	3.60
D	4.95	5.10	5.25
D1	4.80	4.90	5.00
D2	3.76	3.86	3.96
b	0.30	0.35	0.40
B	0.36	0.41	0.46
L	0.56	0.66	0.76
M	0.56	0.66	0.76
G	1.34 REF.		
e	1.27 BSC		
c	0.254 REF.		
θ	0°	-	12°
All Dimensions in mm			

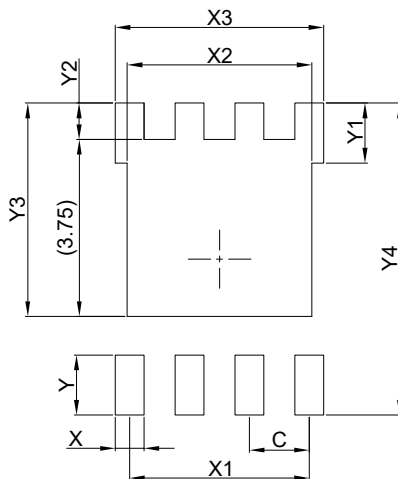


SIDE VIEW

GENERAL NOTES

1. Top package surface finish Ra Max0.4um
2. Bottom package surface finish Ra Max0.4um
3. Side package surface finish Ra Max0.4um
4. Protrusion or Gate Burrs shall not exceed 0.05mm per side.
5. Offcenter Max0.038mm; Mismatch Max 0.038mm.

9. SOLDERING FOOTPRINT



DIM	(mm)
C	1.27
X	0.61
X1	3.81
X2	3.91
X3	4.42
Y	1.27
Y1	1.27
Y2	0.77
Y3	4.52
Y4	6.61

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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