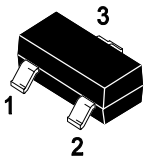
N3430L

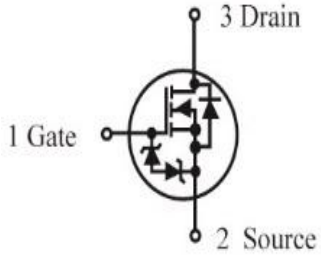
30V N-Channel MOSFET



SOT23

1. FEATURES

- Low RDS(on) trench technology.
- Low Gate Charge.
- High Current Capability.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- ESD Protected



2. APPLICATIONS

- Load switch

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
N3430L	NE3	3000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain−to−Source Voltage		VDSS	30	V
Gate−to−Source Voltage		VGS	±20	V
Continuous Drain Current	TA =25°C	ID	6.3	A
	TA =70°C		5.5	A
Pulsed Drain Current (Note 2)		IDM	25	A
Avalanche Current(L=0.1mH)		IAS	11	A
Avalanche energy(L=0.1mH)		EAS	6.05	mJ
Maximum Power Dissipation(Note 1)	TA =25°C	PD	1	W
	TA =70°C		0.7	
Operating Junction and Storage Temperature Range		TJ/Tstg	−55 ~+150	℃

5. THERMAL CHARACTERISTICS

Parameter		Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 1)	t ≤10s	RθJA	90	℃/W
	Steady State		125	

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

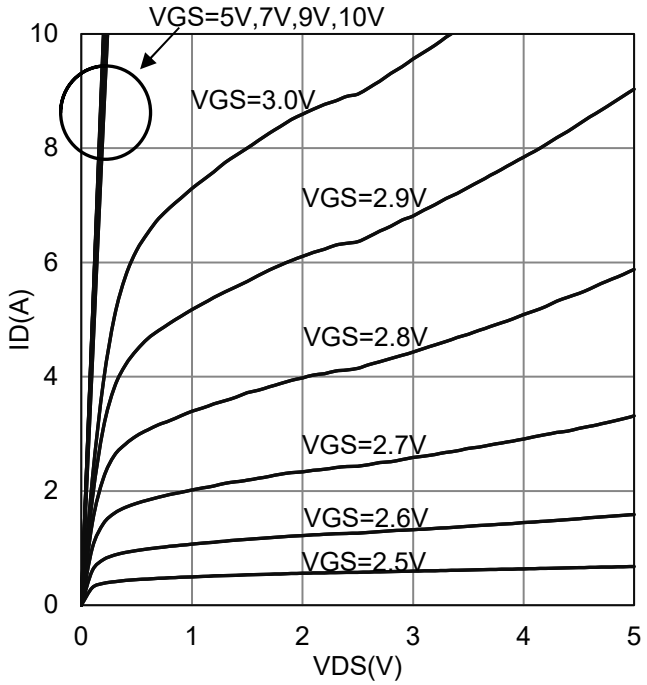
2. Pulse width limited by maximum junction temperature.

6. ELECTRICAL CHARACTERISTICS (Ta= 25ºC)

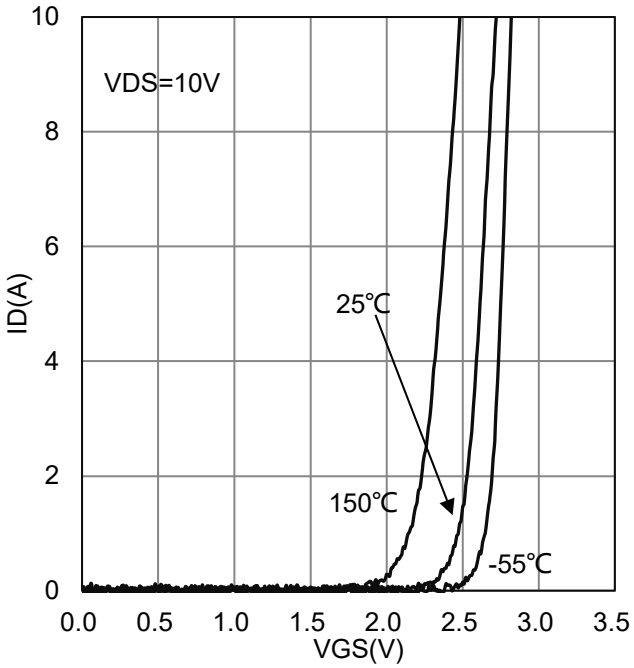
Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)		V(BR)DSS	30	-	-	V
Zero Gate Voltage Drain Current (VDS=30V, VGS=0V) (VDS=30V, VGS=0V,TJ=55ºC)		IDSS	- -	- -	1 5	μA
Gate–Body Leakage Current (VDS = 0 V, VGS = ±20 V)		IGSS	-	-	±10	μA
Gate Threshold Voltage (VDS = VGS, ID = 250μA)		VGS(th)	1.3	-	2.3	V
Static Drain–Source On–State Resistance(Note 3) (VGS = 10 V, ID = 6.2 A) (VGS = 4.5 V, ID = 5.5 A)		RDS(on)	- -	- -	25 31	mΩ
Dynamic						
Input Capacitance	(VDS =15V, VGS =0V,f=1MHz)	Ciss	-	604	-	pF
Output Capacitance		Coss	-	66	-	
Reverse Transfer Capacitance		Crss	-	58	-	
Total Gate Charge(10V)	(VDS =15V, VGS =10V, ID =6.2A)	Qg	-	12.4	-	nC
Total Gate Charge(4.5V)		Qg	-	6.2	-	
Gate-Source Charge		Qgs	-	1.7	-	
Gate-Drain Charge		Qgd	-	2.7	-	
Turn-On Delay Time	(VDS =15V, RL = 3Ω, VGS= 10V, RGEN =3Ω)	td(on)	-	5.8	-	ns
Rise Time		tr	-	4.8	-	
Turn-Off Delay Time		td(off)	-	25.4	-	
Fall Time		tf	-	6.3	-	
Diode Forward Voltage (VGS = 0 V, IS = 1 A)		VSD	-	0.7	1	V
Gate Resistance (VDS=0V ,VGS=0V, f=1.0MHz)		Rg	-	2.5	-	Ω

3.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

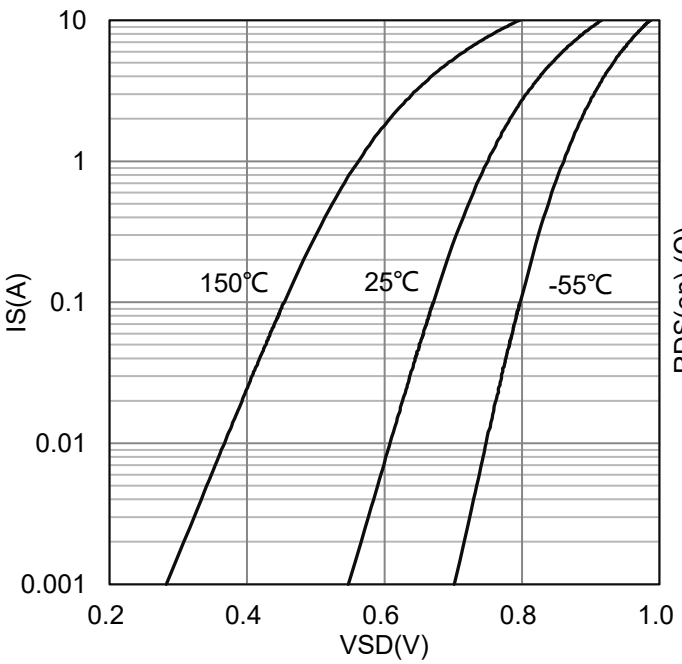
7. ELECTRICAL CHARACTERISTICS CURVES



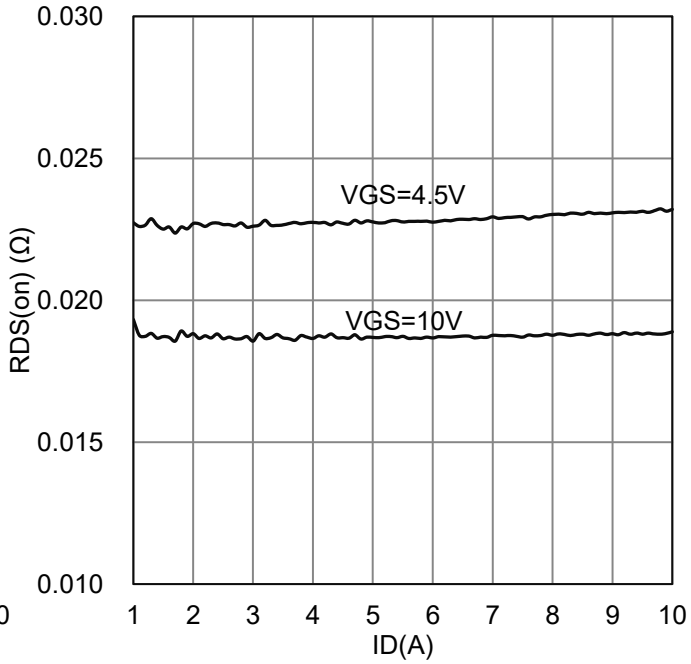
ID vs. VDS



ID vs. VGS

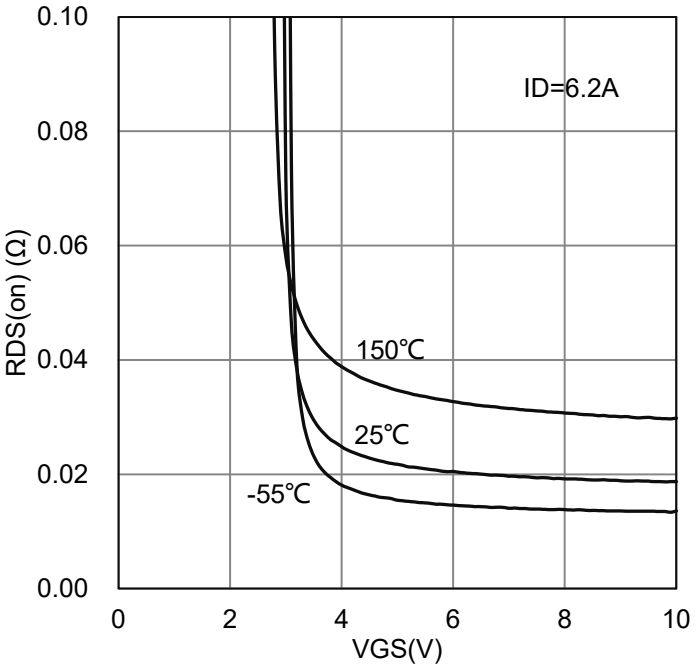


IS vs. VSD

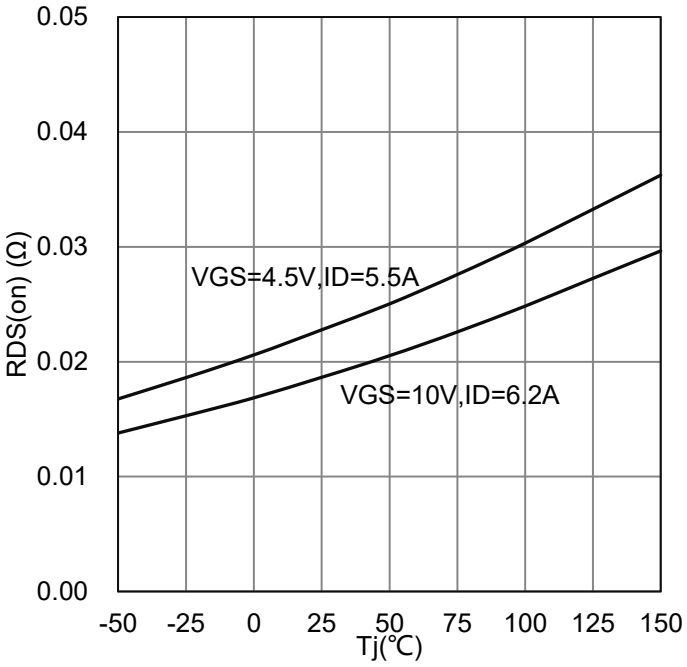


RDS(on) vs. ID

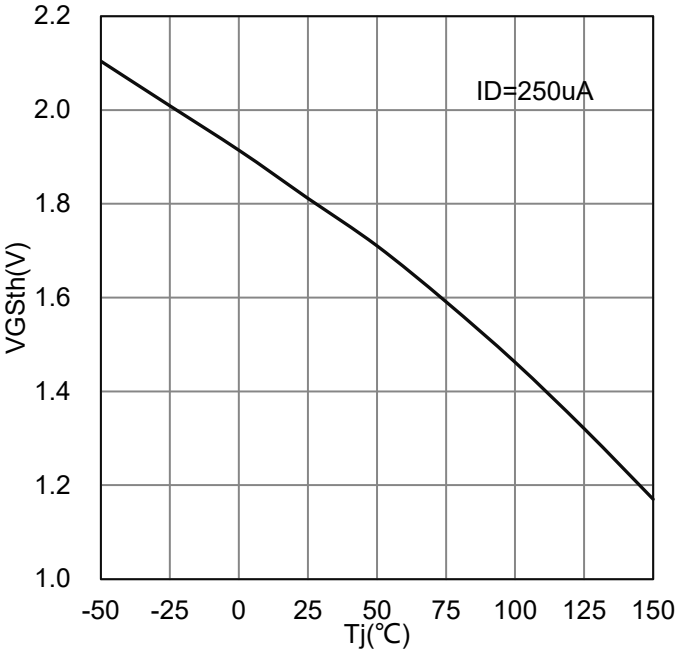
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



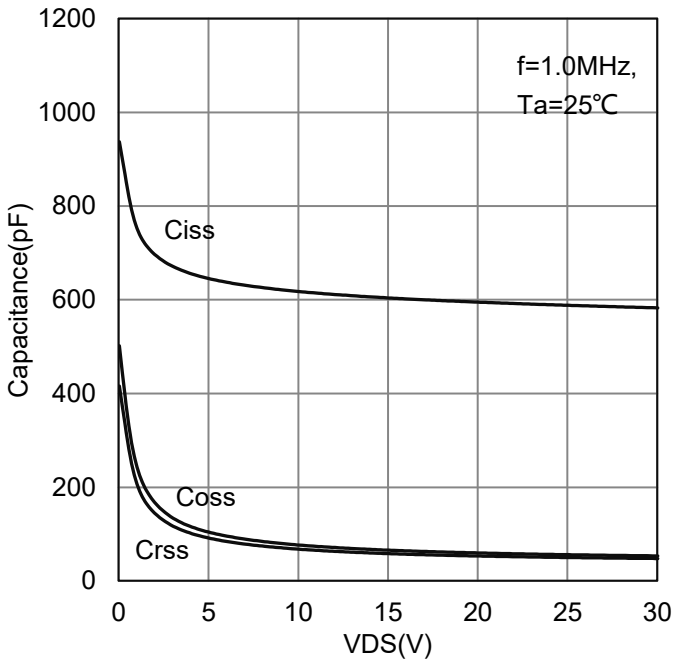
RDS(on) vs. VGS



RDS(on) vs. Tj

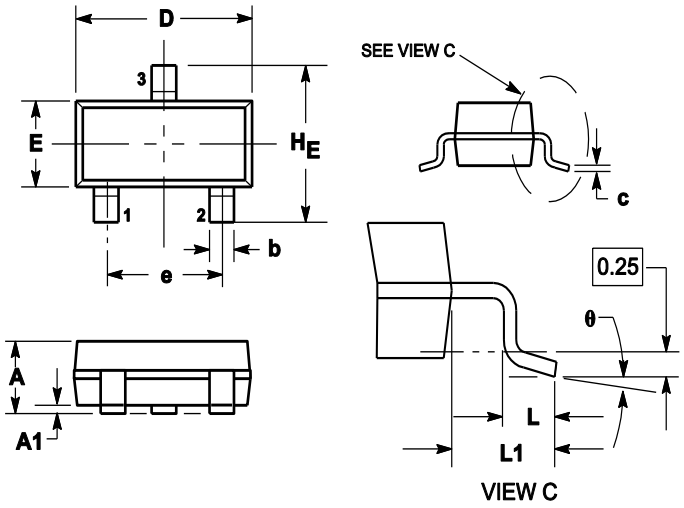


VGSth vs. Tj



Capacitance

8.OUTLINE AND DIMENSIONS



Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
H_E	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

9.SOLDERING FOOTPRINT