TECH PUBLIC
台舟电子

FDC6330L-TP

Integrated Load Switch

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Product Summary

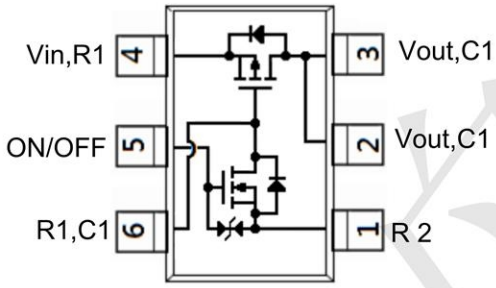
- Vdrop = 0.2V@Vin=12V, IL=2.0A, $R_{DS(ON)}$= 56mΩ Typ
- Vdrop = 0.2V@Vin=5.0V, IL=1.8A, $R_{DS(ON)}$= 90mΩ Typ
- Advanced Trench Process Technology
- Adjustable Turn on/off Slew Rate Control through external R1, R2 and C1
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Application

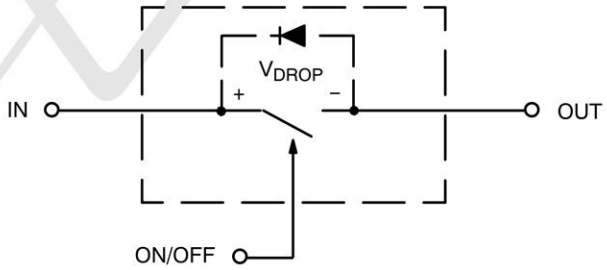
- Battery Packs
- Battery-Powered Portable Equipment
- Cellular and Cordless Telephones

Package and Pin Configuration

SOT23-6



EQUIVALENT CIRCUIT



Marking: 330P

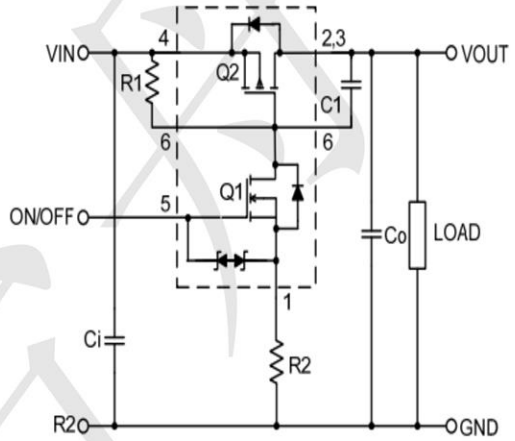
Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	Ratings	UNITS
Input Voltage Range(Note 1)	V_{IN}	3-20	V
On/Off Voltage Range	V_{ON}/V_{OFF}	1.5-8	V
Continuous Load Current t(Note 2,3)	I_D	2.5	A
Pulsed Load Current(Note 4)	I_D	10	A
Power Dissipation(Note 2)	P_D	0.83	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55~150	°C
ESD, MIL-STD-883D HBM (100pF/1.5kohm) (Von/off pin)	V_{ESD}	2	kV
Typical Junction to Ambient(Note 2)	$R_{\theta JA}$	150	°C/W

Electrical Characteristics (T_A = 25°C unless otherwise noted)

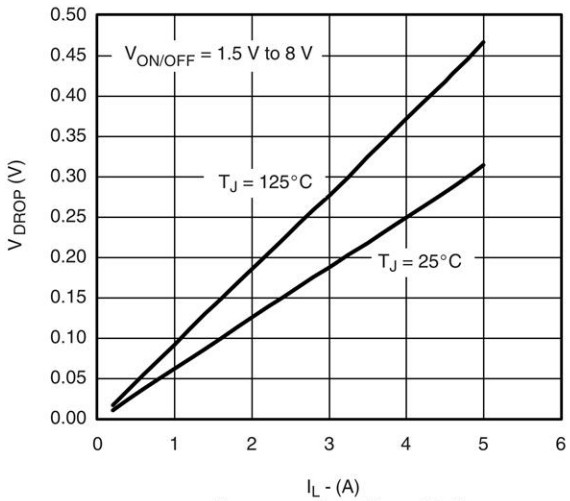
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Off Characteristics						
Leakage Current	I_{FL}	V_{IN}=20V, V_{ON}/V_{OFF}=0V	-	-	1	uA
Diode Forward Voltage	V_{SD}	I_S=-1.0A	-	-0.76	-1.2	V
On Characteristics						
Conduction Voltage	Vdrop	Vin=12V,Von/oFF=3.3V, IL=2.0A,		-	0.2	V
		Vin=5V,Von/oFF=5.0V , IL=1.8A,		-	0.2	V
Drain-Source On-State Resistance (Q2)	$R_{DS(on)}$	V_{GS}=-12V, I_D=-2.0A	-	56	90	mΩ
		V_{GS}=-5.0V, I_D=-1.8A	-	95	120	mΩ
Load Current	IL	Vdrop=0.2V,Vin=12V,Von/oFF=3.3V	2.0	-		A
		Vdrop=0.2V,Vin=5V,Von/oFF=3.3V	1.8	-		A

Typical Application Circuit

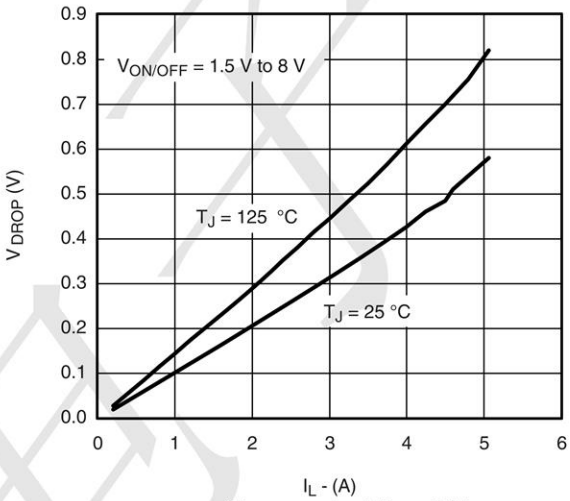


Component Table		
R1	Pull-Up Resistor	Typical 10kΩ to 1MΩ
R2	Optional Slew-Rate Control	Typical 0kΩ to 100kΩ
C1	Optional Slew-Rate Control	Typical 1uF
Note: R1 should be at least 10 * R2 to ensure Q1 turn-on		

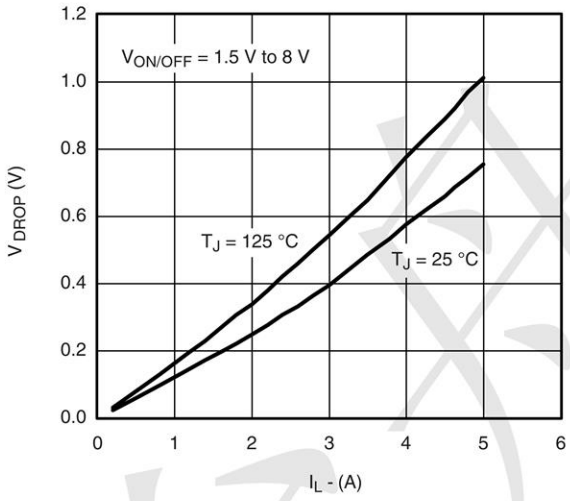
Typical Operating Characteristics



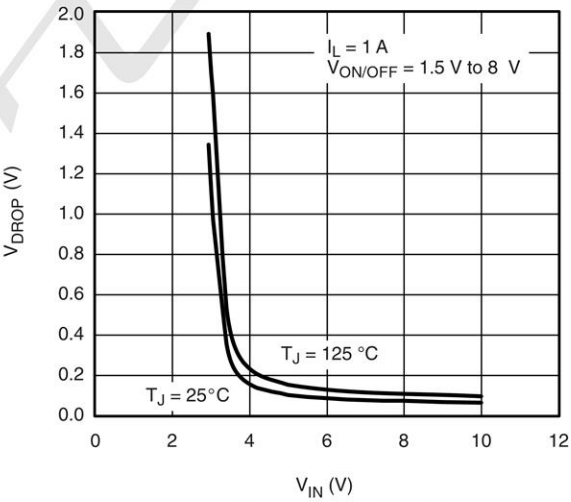
V_{DROP} vs. I_L at V_{IN} = 10 V



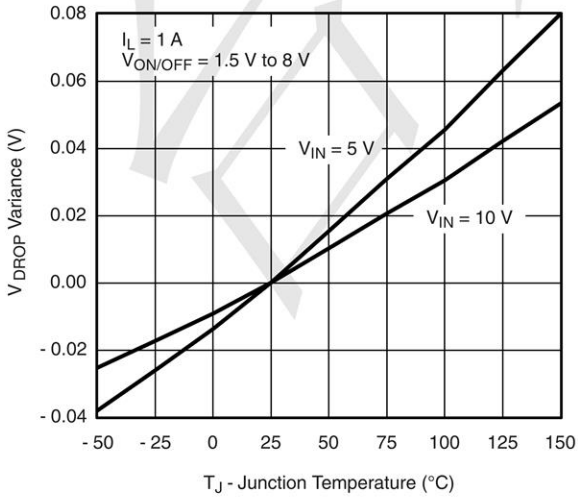
V_{DROP} vs. I_L at V_{IN} = 5 V



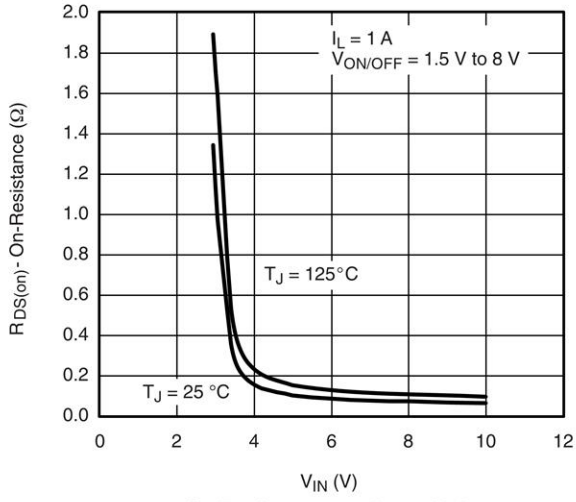
V_{DROP} vs. I_L at V_{IN} = 4.5 V



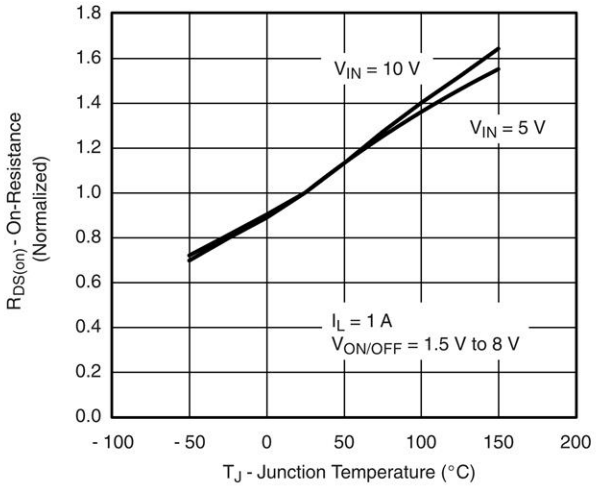
V_{DROP} vs. V_{IN} at = 1 A



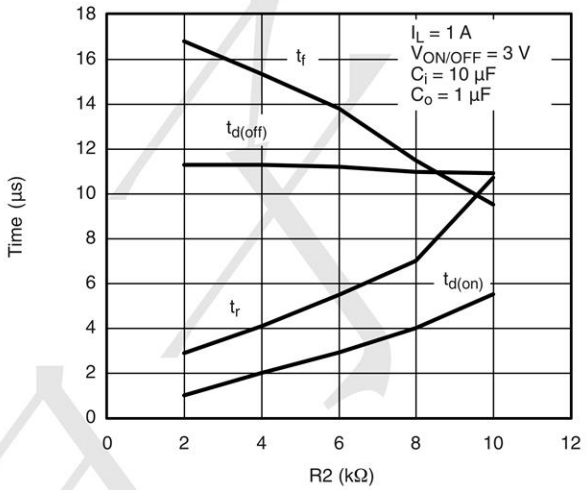
V_{DROP} Variance vs. Junction Temperature



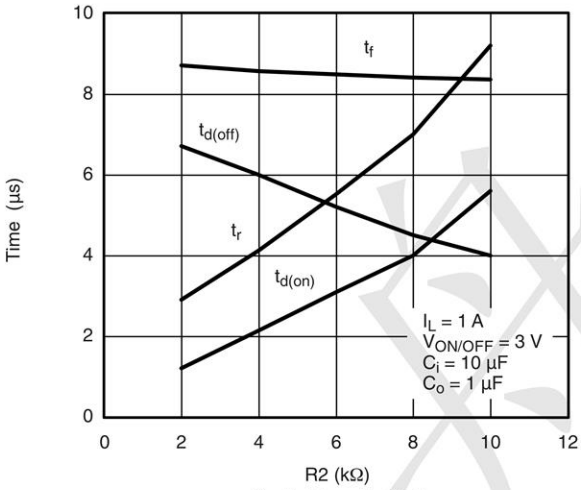
On-Resistance vs. Input Voltage



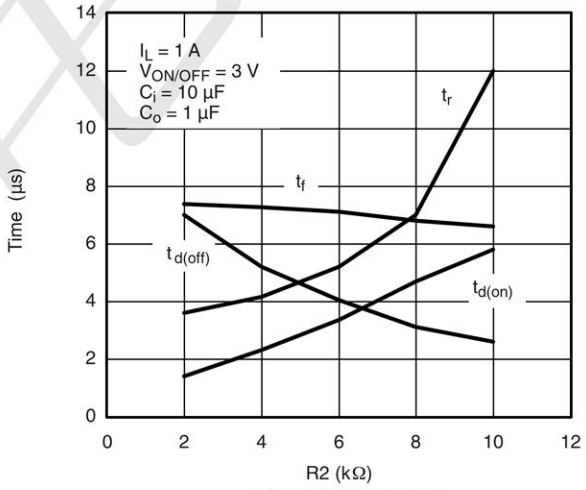
Normalized On-Resistance vs. Junction Temperature



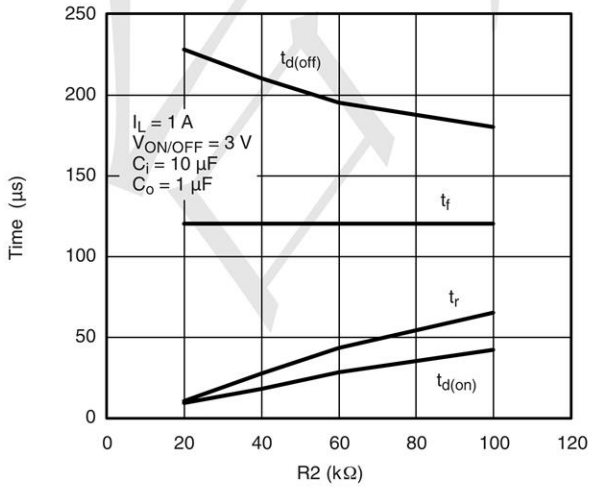
Switching Variation
R2 at V_{IN} = 10 V, R1 = 20 kΩ



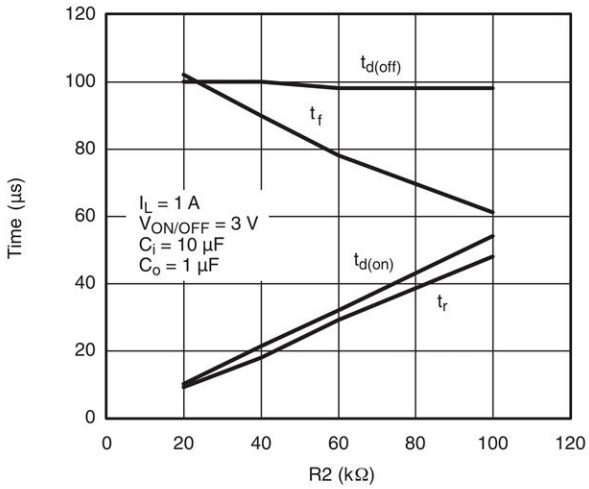
Switching Variation
R2 at V_{IN} = 5 V, R1 = 20 kΩ



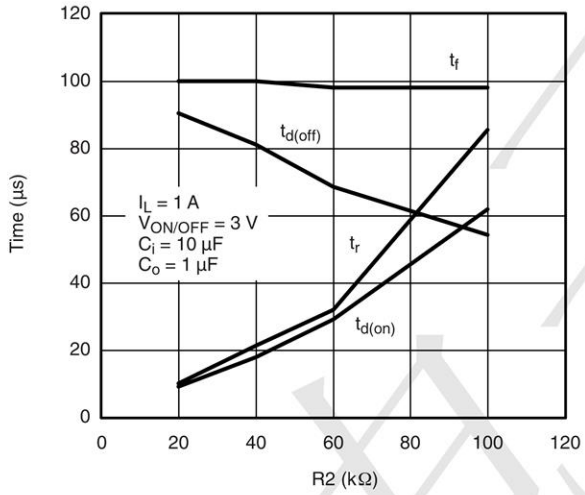
Switching Variation
R2 at V_{IN} = 4.5 V, R1 = 20 kΩ



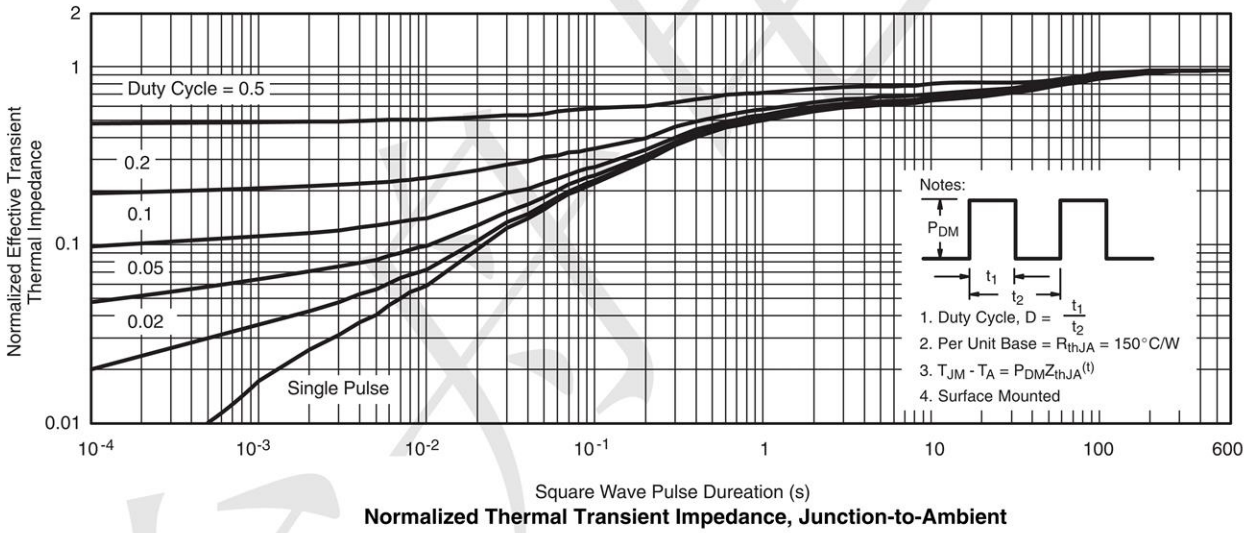
Switching Variation
R2 at V_{IN} = 10 V, R1 = 300 kΩ



Switching Variation
R2 at V_{IN} = 5 V, R1 = 300 kΩ

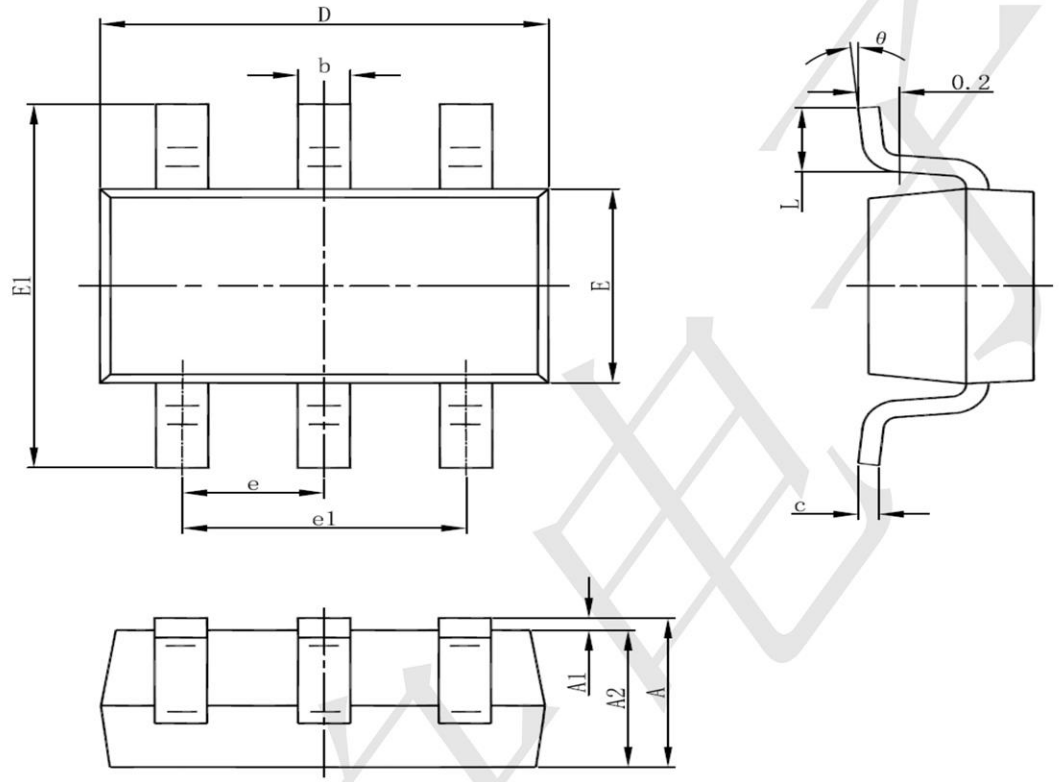


Switching Variation
R2 at V_{IN} = 4.5 V, R1 = 300 kΩ



Normalized Thermal Transient Impedance, Junction-to-Ambient

SOT23-6 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°