

Features

- High Density Cell Design For Low $R_{DS(ON)}$
- Exceptional On-Resistance and Maximum DC Current Capability
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

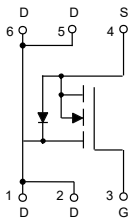
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 62.5°C/W Junction to Ambient^(Note1)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	5.8	A
Pulsed Drain Current ^(Note2)	I_{DM}	30	A
Total Power Dissipation	P_D	2	W

Note 1. Surface Mounted on FR4 Board, $t < 5\text{sec}$.

2. Repetitive Rating : Pulse Width Limited by Maximum Junction Temperature.

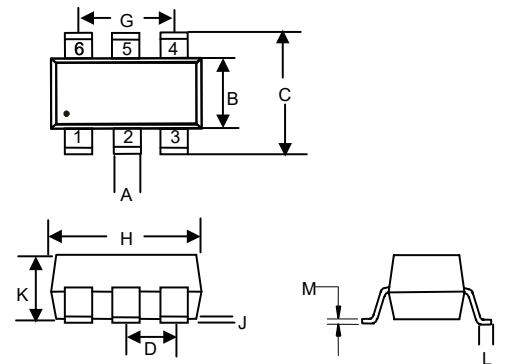
Internal Structure



Marking:3400A

**N-CHANNEL
MOSFET**

SOT23-6L



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.012	0.020	0.30	0.50	
B	0.051	0.070	1.30	1.80	
C	0.087	0.126	2.20	3.20	
D	0.037		0.95		TYP.
G	0.074		1.90		TYP.
H	0.106	0.122	2.70	3.10	
J	0.002	0.006	0.05	0.15	
K	0.030	0.051	0.75	1.30	
L	0.012	0.024	0.30	0.60	
M	0.003	0.008	0.08	0.22	

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$			1	μA
Gate-Threshold Voltage ^(Note 3)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.7		1.4	V
Drain-Source On-Resistance ^(Note 3)	$R_{DS(on)}$	$V_{GS}=10V, I_D=5.8A$		29	32	m Ω
		$V_{GS}=4.5V, I_D=5A$		32	38	
		$V_{GS}=2.5V, I_D=4A$		40	45	
Forward Transconductance ^(Note 3)	g_{FS}	$V_{DS}=5V, I_D=5A$	8			S
Dynamic Characteristics^(Note 4)						
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1MHz$			1155	pF
Output Capacitance	C_{oss}			108		
Reverse Transfer Capacitance	C_{rss}			84		
Gate Resistance	R_g	$V_{DS}=0V, V_{GS}=0V, f=1MHz$			3.6	Ω
Switching Characteristics^(Note 4)						
Total Gate Charge	Q_g	$V_{DS}=15V, V_{GS}=4.5V, I_D=5.6A$		4.8		nC
Gate-Source Charge	Q_{gs}			1.2		
Gate-Drain Charge	Q_{gd}			1.7		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DS}=15V, R_L=2.7\Omega, R_{GEN}=3\Omega$			5	ns
Turn-On Rise Time	t_r				7	
Turn-Off Delay Time	$t_{d(off)}$				40	
Turn-Off Fall Time	t_f				6	
Drain-Source Body Diode Characteristics						
Body Diode Voltage ^(Note 3)	V_{SD}	$I_S=1A, V_{GS}=0V$			1	V

Note 3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

4. Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Output Characteristics

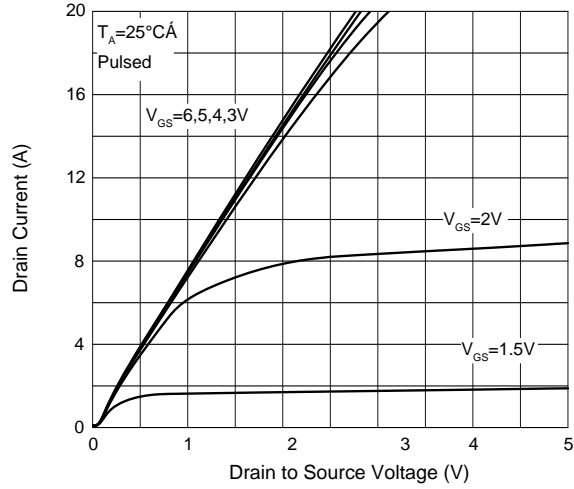


Fig. 2 - Transfer Characteristics

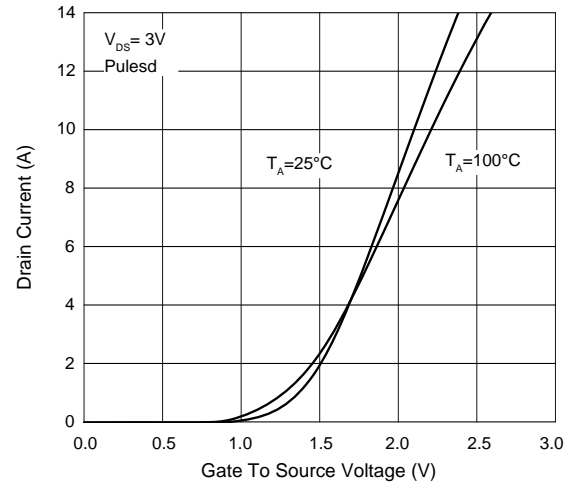


Fig. 3 - $R_{DS(ON)} - I_D$

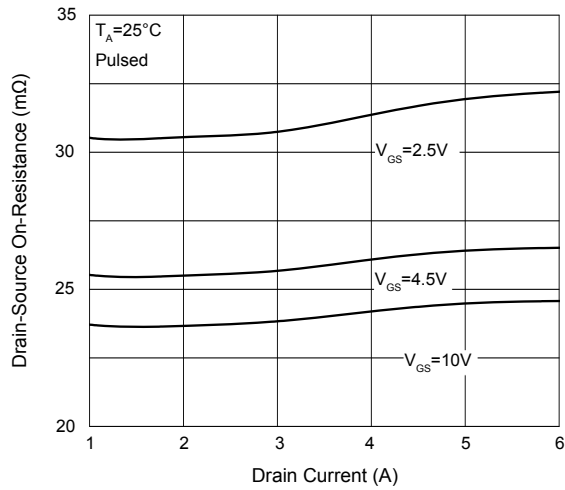


Fig. 4 - $R_{DS(ON)} - V_{GS}$

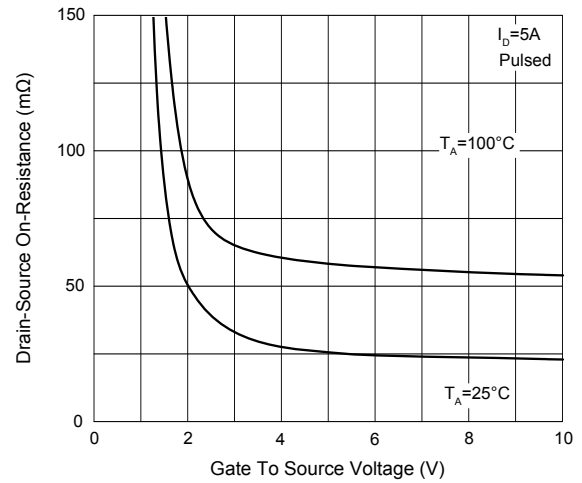


Fig. 5 - $I_S - V_{SD}$

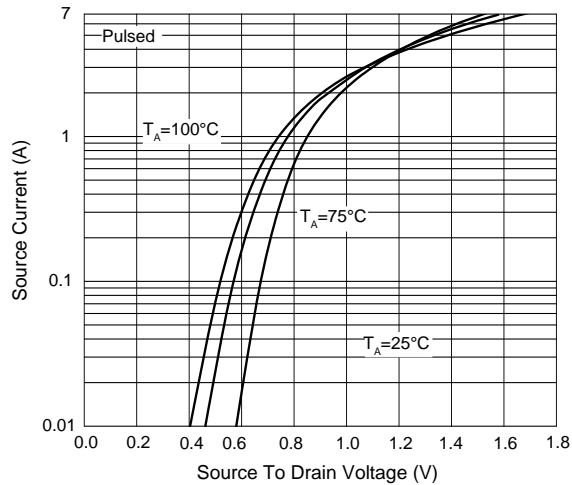
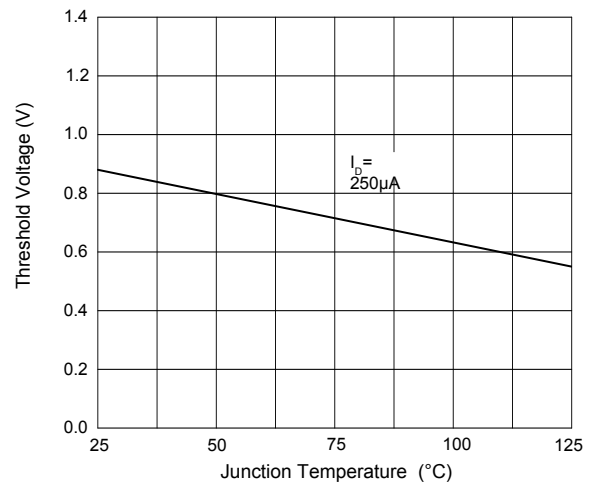


Fig. 6 - Threshold Voltage



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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