Elektronische Bauelemente

SDT3005

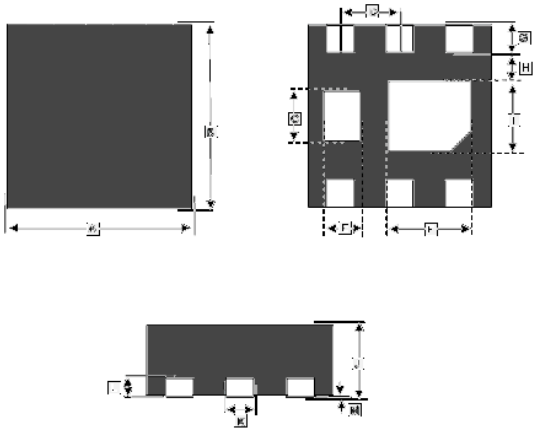
5A, 30V, $R_{DS(ON)}$ 42 mΩ
N-Channel Enhancement Mode Power MOSFET

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

DESCRIPTION

SDT3005 provides designers with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness. DFN2*2-6J package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

DFN2*2-6J



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			

FEATURES

- TrenchFET power MOSFET
- Low $R_{DS(on)}$
- Typical ESD protection

APPICTIONS

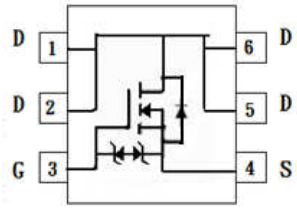
- Load switch and battery protection

MARKING

3005

PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN2*2-6J	3K	7 inch



ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	5	A
Pulsed Drain Current [1]	I_{DM}	20	A
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	℃ / W
Operating Junction and Storage Temperature	T_J, T_{STG}	150, -55~150	℃

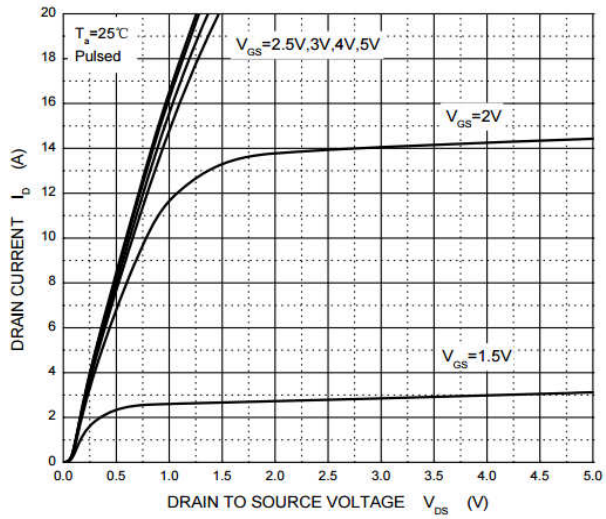
ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	30	-	-	V	V_{GS}=0, I_D=250μA
Gate-Source Leakage Current	I_{GSS}	-	-	±10	μA	V_{GS}= ±10V, V_{DS}=0
Drain-Source Leakage Current	I_{DSS}	-	-	1	μA	V_{DS}=30V, V_{GS}=0
Gate-Threshold Voltage [2]	$V_{GS(th)}$	0.6	-	1	V	V_{DS}=V_{GS}, I_D=250μA
Forward Transconductance [2]	g_{fs}	-	15	-	S	V_{DS}=5V, I_D=4A
Diode Forward Voltage [2]	V_{SD}	-	-	1	V	I_S=1A, V_{GS}=0
Static Drain-Source On-Resistance [2]	$R_{DS(ON)}$	-	-	42	mΩ	V_{DS}=10V, I_D=5A
		-	-	44		V_{DS}=4.5V, I_D=5A
		-	-	50		V_{GS}=2.5V, I_D=4A
Dynamic Characteristics						
Input Capacitance	C_{iss}	-	245	-	pF	V_{DS}=15V V_{GS}=0V f=1MHz
Output Capacitance	C_{oss}	-	35	-		
Reverse Transfer Capacitance	C_{rss}	-	20	-		
Switching Characteristics						
Total Gate Charge	Q_g	-	10	-	nC	I_D=4A V_{DS}=15V V_{GS}=10V
Gate-Source Charge	Q_{gs}	-	0.5	-		
Gate-Drain Charge	Q_{gd}	-	1	-		
Turn-On Delay Time	$T_{d(on)}$	-	2	-	nS	V_{DD}=15V V_{GS}=10V R_L= 3.75Ω R_{GEN}=3Ω
Rise Time	T_r	-	3.5	-		
Turn-Off Delay Time	$T_{d(off)}$	-	22	-		
Fall Time	T_f	-	3.5	-		

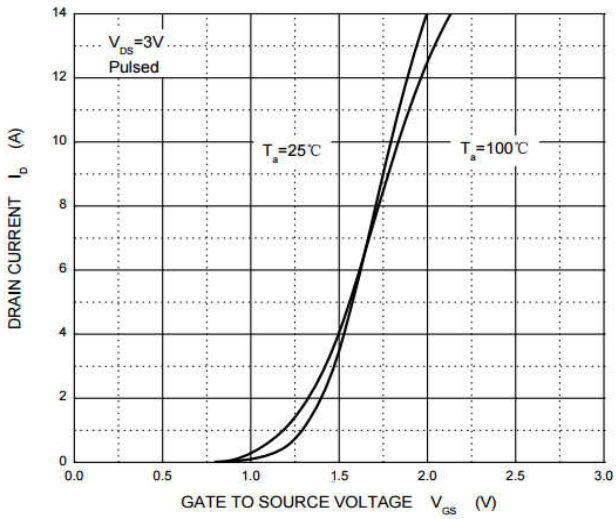
Notes:
1. Repetitive rating：Pulse width limited by junction temperature.
2. Pulse Test: Pulse With≦300μs, duty cycle≦2%.

CHARACTERISTIC CURVES

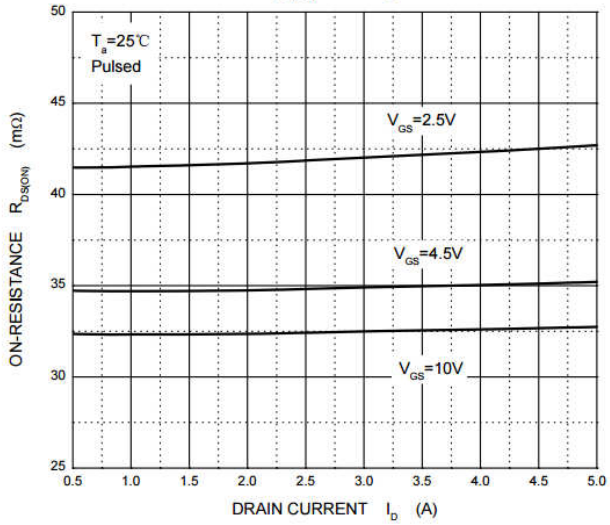
Output Characteristics



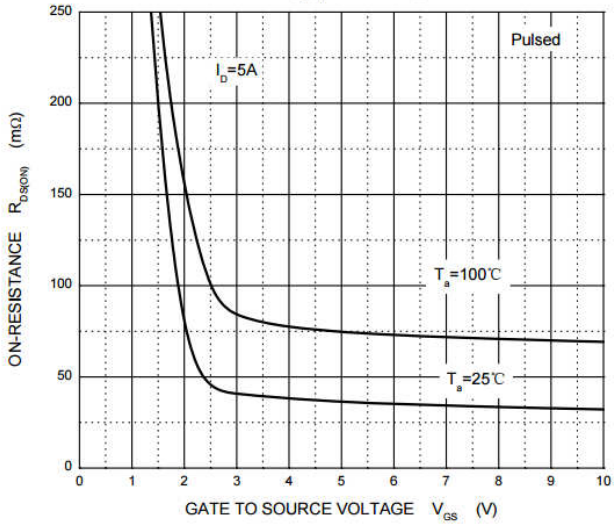
Transfer Characteristics



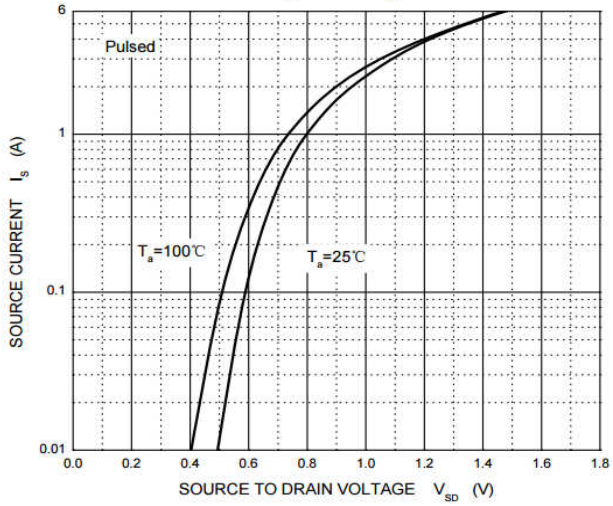
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage