Elektronische Bauelemente

STT2605

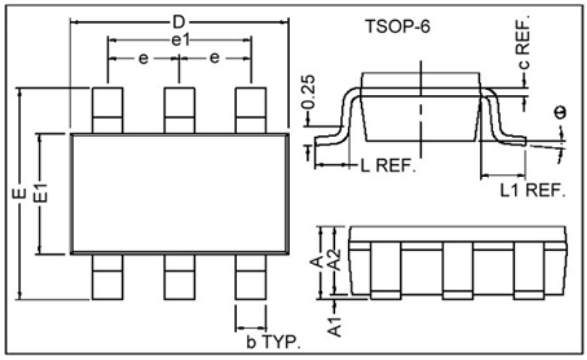
-4.0A, -30V,$R_{DS(ON)}$ 80mΩ

P-Channel Enhancement Mode Power Mos.FET

RoHS Compliant Product

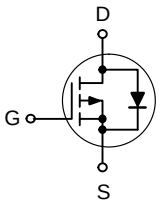
Description

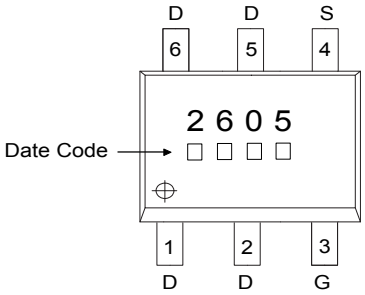
The STT2605 utiltzed advance processing techniques to achieve the lowest possible on-resistance, extermely efficient and cost-effectiveness device. The STT2605 is universally used for all commercial-industrial applications.



Features

* Fast Switching Characteristic
* Lower Gate Charge
* Small Footprint & Low Profile Package





REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.10 MAX.		L	0.45 REF.	
A1	0	0.10	L1	0.60 REF.	
A2	0.70	1.00	□	0°	10°
c	0.12 REF.		b	0.30	0.50
D	2.70	3.10	e	0.95 REF.	
E	2.60	3.00	e1	1.90 REF.	
E1	1.40	1.80			

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current, (Note 3)	I_D@T_A=25℃	-4.0	A
Continuous Drain Current, (Note 3)	I_D@T_A=70℃	-3.3	A
Pulsed Drain Current (Note 1)	I_{DM}	-20	A
Total Power Dissipation	P_D@T_A=25℃	2.0	W
Linear Derating Factor		0.016	W/℃
Operating Junction and Storage Temperature Range	Tj, Tstg	-55~+150	℃

Thermal Data

Parameter	Symbol	Ratings	Unit
Thermal Resistance Junction-ambient (Note 3)	Rthj-a	62.5	℃/W

Elektronische Bauelemente

STT2605

-4.0A, -30V,$R_{DS(ON)}$ 80mΩ

P-Channel Enhancement Mode Power Mos.FET

Electrical Characteristics(Tj=25℃ Unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	BV_{DSS}	-30	–	–	V	V_{GS}=0V, I_D=-250uA
Breakdown Voltage Temp. Coefficient	$\triangle BV_{DS}/\triangle Tj$	–	-0.02	–	V/℃	Reference to 25℃,I_D=-1mA
Gat Thershold Voltage	$V_{GS(th)}$	-1.0	–	-3.0	V	V_{DS}=V_{GS}, I_D=-250uA
Gate-Source Leakage Current	I_{GSS}	–	–	±100	nA	V_{GS}=±20V
Drain-Source Leakage Current (Tj=25℃)	I_{DSS}	–	–	-1	uA	V_{DS}=-30V,V_{GS}=0
Drain-Source Leakage Current (Tj=55℃)		–	–	-25	uA	V_{DS}=-24V,V_{GS}=0
StaticDrain-Source On-Resistance [2]	$R_{DS(ON)}$	–	–	80	mΩ	V_{GS}=-10V, I_D=-4.0A
		–	–	120		V_{GS}=-4.5V, I_D=-3.0A
Total Gate Charge	Qg	–	5.5	8.8	nC	I_D=-4.0A V_{DS}=-24V V_{GS}=-4.5V
Gate-Source Charge[2]	Qgs	–	1	–		
Gate-Drain ("Miller") Charge	Qgd	–	2.6	–		
Turn-on Delay Time [2]	$Td_{(ON)}$	–	7	–	nS	V_{DD}=-15V I_D=-1A V_{GS}=-10V R_G=3.3Ω R_D=15 Ω
Rise Time	Tr	–	6	–		
Turn-off Delay Time	$Td_{(Off)}$	–	18	–		
Fall Time	T_f	–	4	–		
Input Capacitance	Ciss	–	400	640	pF	V_{GS}=0V V_{DS}=-25V f=1.0MHz
Output Capacitance	Coss	–	90	–		
Reverse Transfer Capacitance	Crss	–	30	–		
Forward Transconductance	Gfs	–	6	–	S	V_{DS}=-5V, I_D=-4.0A

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Forward On Voltage [2]	V_{DS}	–	–	-1.2	V	I_S=-1.6A, V_{GS}=0V.
Reverse Recovery Time [2]	Trr	–	21	–	nS	Is=-4.0A, V_{GS}=0V dI/dt=100A/us
Reverse Recovery Charge	Qrr	–	14	–	nC	

Notes: 1.Pulse width limited by safe operating area.
2.Pulse width≦300us, dutycycle≦2%.
3.Surface mounted on 1 in² copper pad of FR4 board; 156°C/W when mounted on Min. copper pad.

Elektronische Bauelemente

STT2605

-4.0A -30V,RDS(ON) 80mΩ

P-Channel Enhancement Mode Power Mos.FET

Characteristics Curve

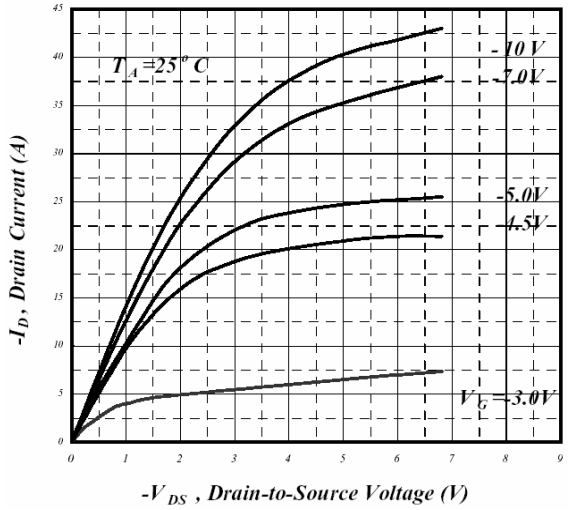


Fig 1. Typical Output Characteristics

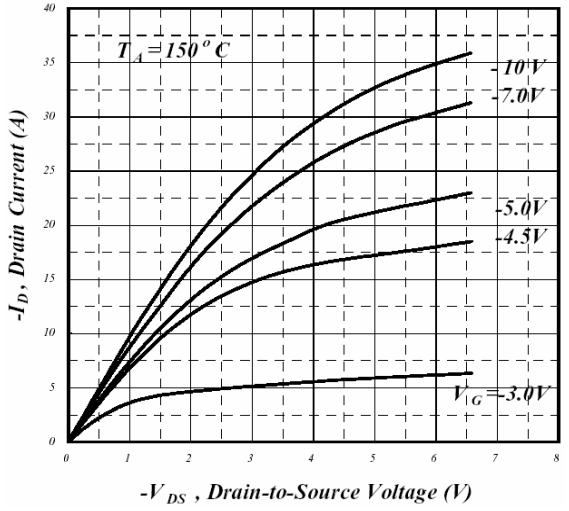


Fig 2. Typical Output Characteristics

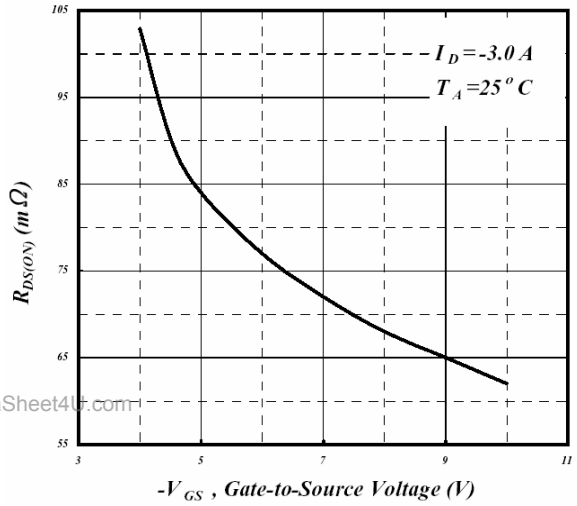


Fig 3. On-Resistance v.s. Gate Voltage

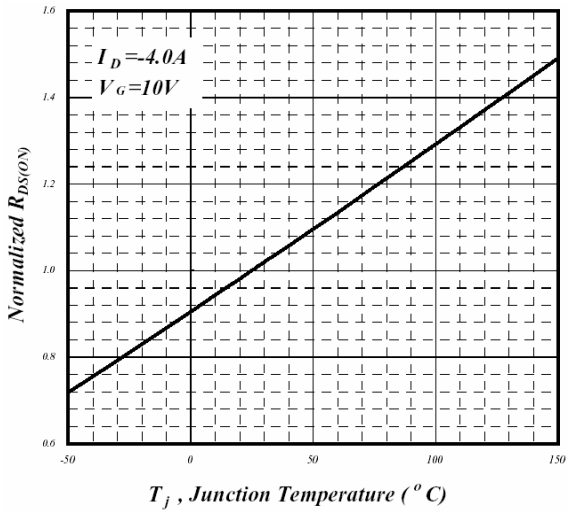


Fig 4. Normalized On-Resistance v.s. Junction Temperature

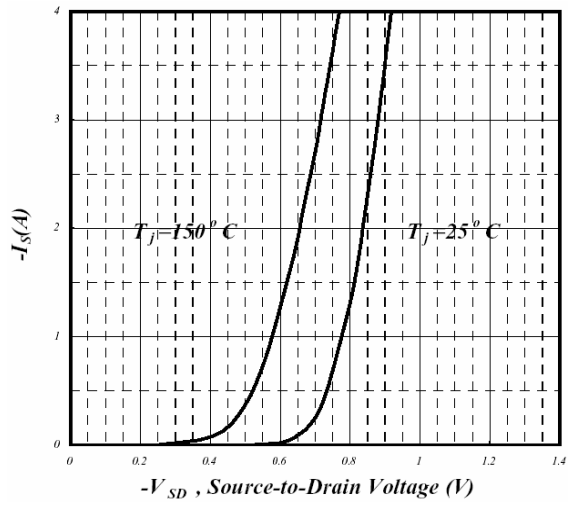


Fig 5. Forward Characteristics of Reverse Diode

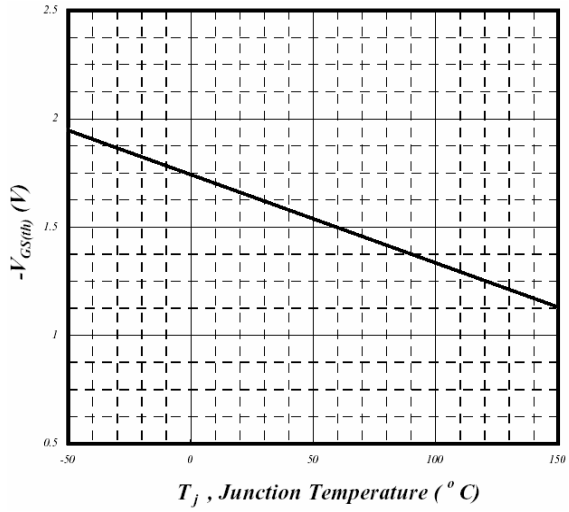


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

Elektronische Bauelemente

STT2605

-4.0A, -30V, $R_{DS(ON)}$ 80mΩ

P-Channel Enhancement Mode Power Mos.FET

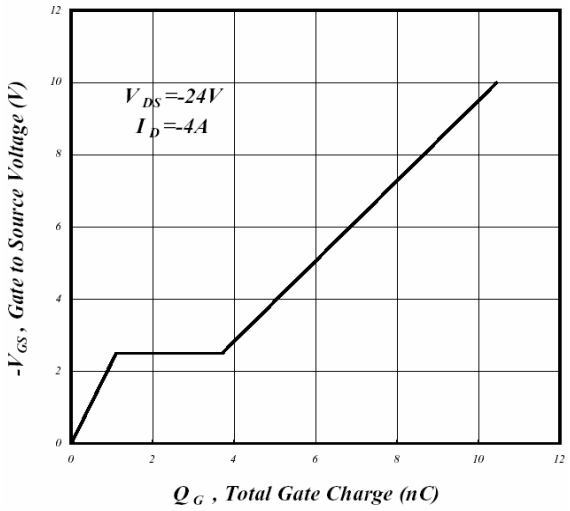


Fig 7. Gate Charge Characteristics

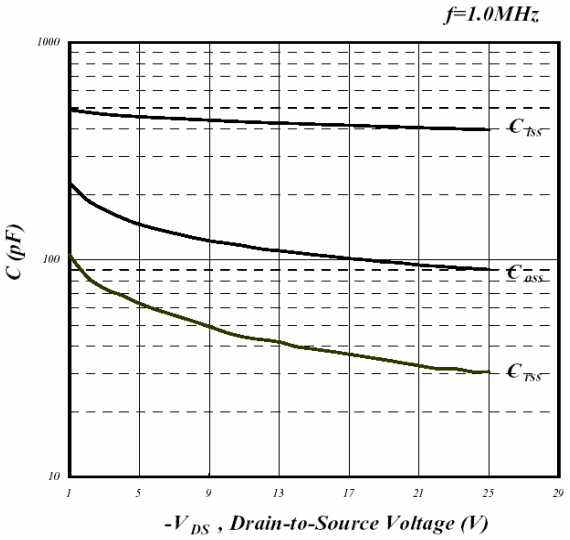


Fig 8. Typical Capacitance Characteristics

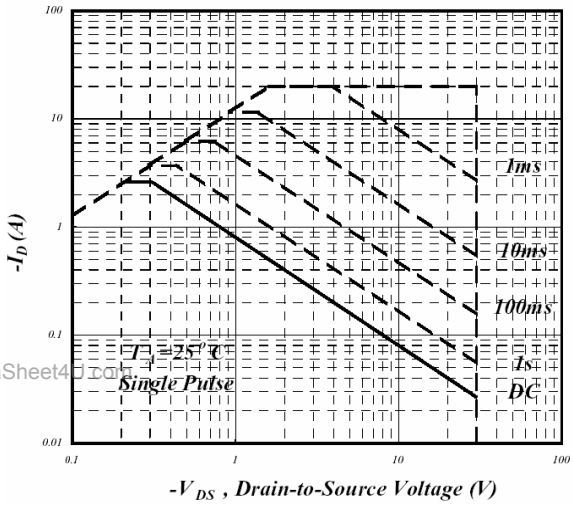


Fig 9. Maximum Safe Operating Area

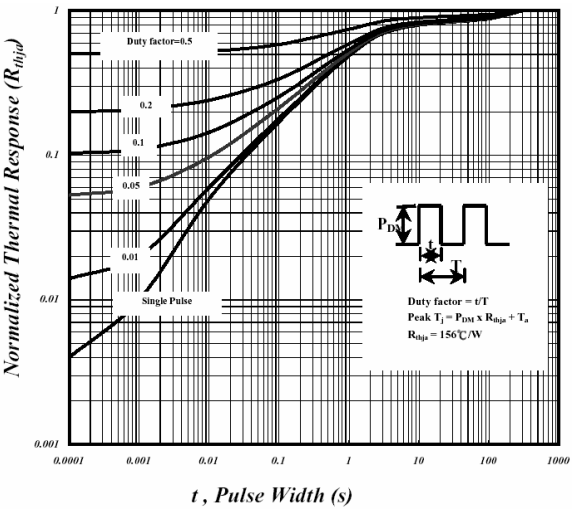


Fig 10. Effective Transient Thermal Impedance

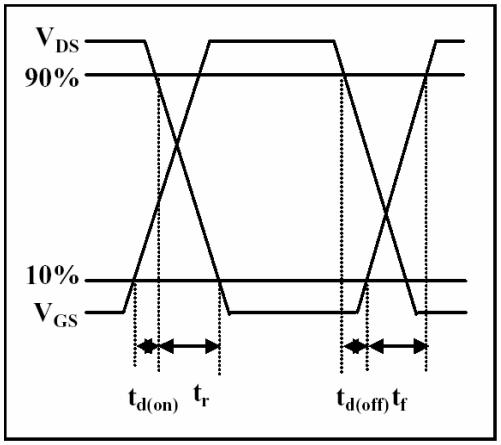


Fig 11. Switching Time Waveform

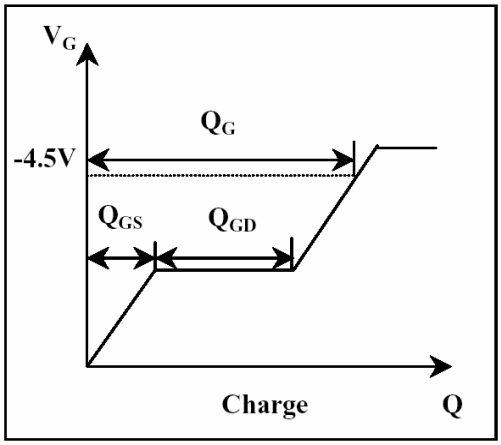


Fig 12. Gate Charge Waveform