

RoHS Compliant Product

A suffix of "-C" specifies halogen and lead-free

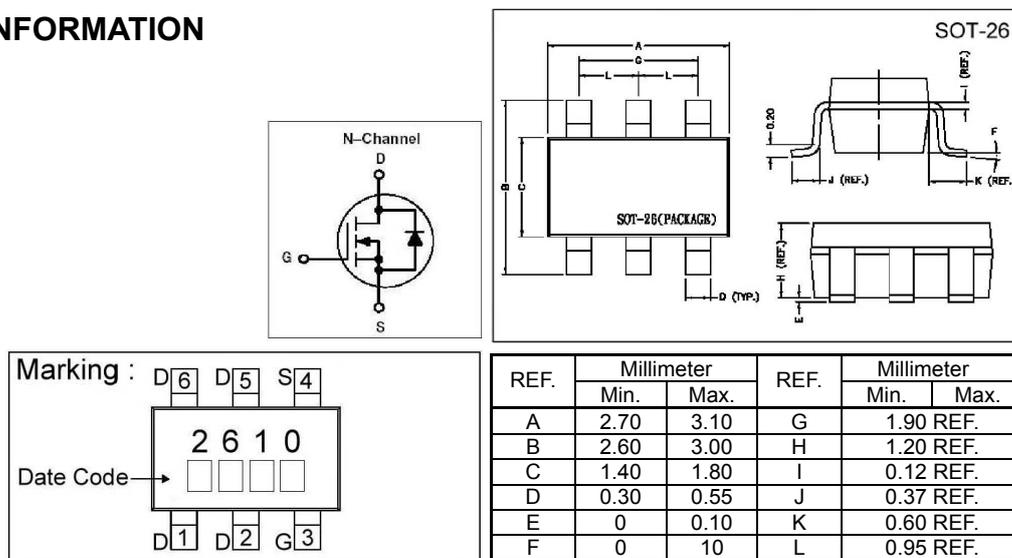
DESCRIPTION

- The SST2610 uses advanced processing techniques to achieve the lowest possible on-resistance, extremely efficient and cost-effectiveness device.
- It is universally used for all commercial-industrial applications.

APPLICATIONS

- Low on-resistance
- Capable of 2.5V gate drive

PACKAGE INFORMATION



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current ³	I_D	3.0	A
Continuous Drain Current ³	I_D	2.3	A
Pulsed Drain Current ^{1,2}	I_D	10	A
Power Dissipation	P_D	2	W
Linear Derating Factor		0.016	W / °C
Operating Junction and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	°C

THERMAL DATA

Parameter	Symbol	Ratings	Unit
Thermal Resistance Junction-ambient ³	$R_{\theta JA}$	62.5	°C / W

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV _{DSS}	60	-	-	V	V _{GS} = 0, I _D = 250uA
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS} / \Delta T_J$	-	0.05	-	V / °C	Reference to 25°C, I _D =1mA
Forward Transconductance	V _{GS(th)}	1.0	-	3.0	V	V _{DS} =V _{GS} , I _D =250uA
Gate Leakage Current	g _{fs}	-	5.0	-	S	V _{DS} = 5V, I _D =3A
Zero Gate Voltage Drain Current	I _{GSS}	-	-	±100	nA	V _{GS} = ±20V
Zero Gate Voltage Drain Current (T _J =25°C)	I _{DSS}	-	-	10		V _{DS} =60V, V _{GS} =0
Drain-Source Leakage Current (T _J =70°C)		-	-	25		V _{DS} =48V, V _{GS} =0
Static Drain-Source On-Resistance	R _{DS(ON)}	-	-	90	mΩ	V _{GS} =10V, I _D =3A
		-	-	120		V _{GS} =4.5V, I _D =2A
Total Gate Charge ²	Q _g	-	6	10	ns	I _D =3A V _{DS} =48V V _{GS} =4.5V
Gate-Source Charge	Q _{gs}	-	1.6	-		
Gate-Drain ("Miller") Change	Q _{gd}	-	3	-		
Turn-on Delay Time ²	T _{d(on)}	-	6	-	ns	V _{DS} =30V I _D =1A V _{GS} =10V R _G =3.3Ω R _D =30Ω
Rise Time	T _r	-	5	-		
Turn-off Delay Time	T _{d(off)}	-	16	-		
Fall Time	T _f	-	3	-		
Input Capacitance	C _{iss}	-	490	780	pF	V _{GS} =0V V _{DS} =25V f=1.0MHz
Output Capacitance	C _{oss}	-	55	-		
Reverse Transfer Capacitance	C _{rss}	-	40	-		

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage ²	V _{SD}	-	-	1.2	V	I _S = 1.2 A, V _{GS} = 0 V
Reverse Recovery Time	T _{rr}	-	25	-	ns	I _S =3A, V _{GS} =0V
Reverse Recovery Charge	Q _{rr}	-	26	-	nC	di/dt=100A/μs

- Notes:
1. Pulse width limited by Max. junction temperature.
 2. Pulse width 300us, duty cycle ≤ 2%.
 3. Surface mounted on 1 in² copper pad of FR4 board, 156°C/W when mounted on min. copper pad.

SST2610

3 A, 60 V, RDS(ON) 90 mΩ
N-Channel Enhancement Mode Power Mos.FET

CHARACTERISTIC CURVES

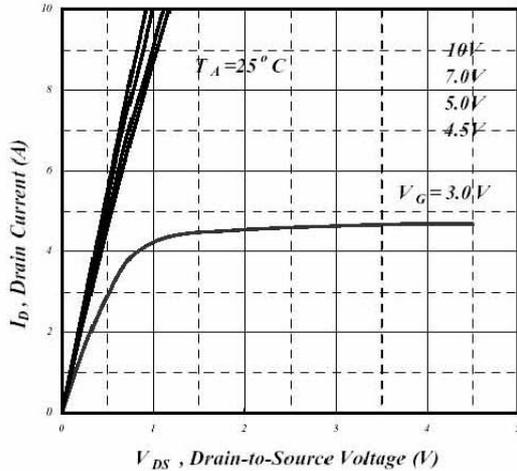


Fig 1. Typical Output Characteristics

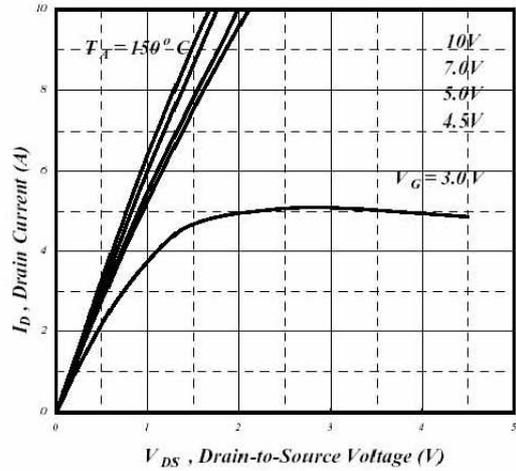


Fig 2. Typical Output Characteristics

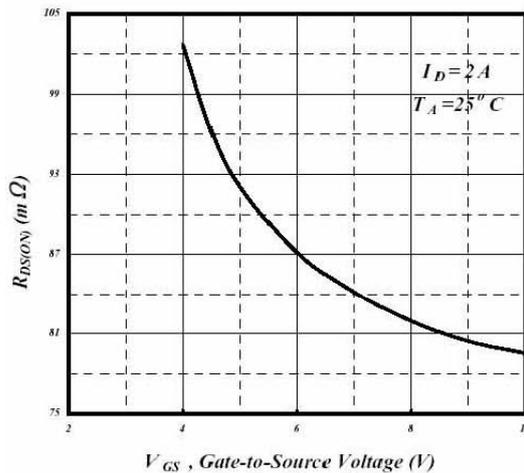


Fig 3. On-Resistance v.s. Gate Voltage

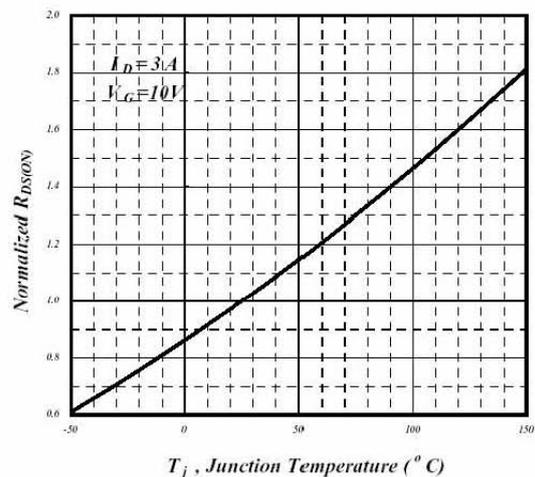


Fig 4. Normalized On-Resistance v.s. Junction Temperature

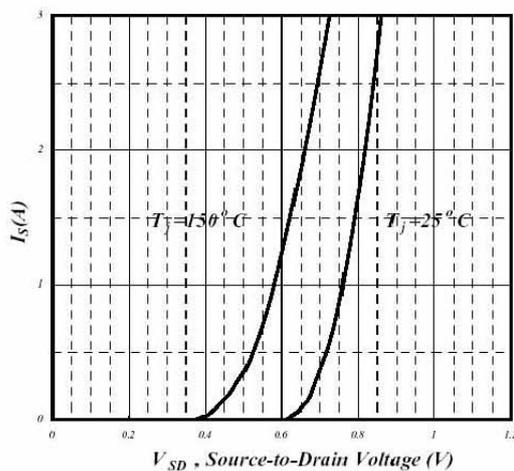


Fig 5. Forward Characteristics of Reverse Diode

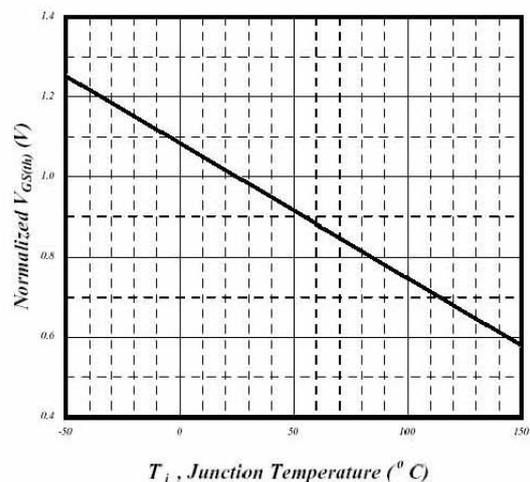


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

CHARACTERISTIC CURVES (cont'd)

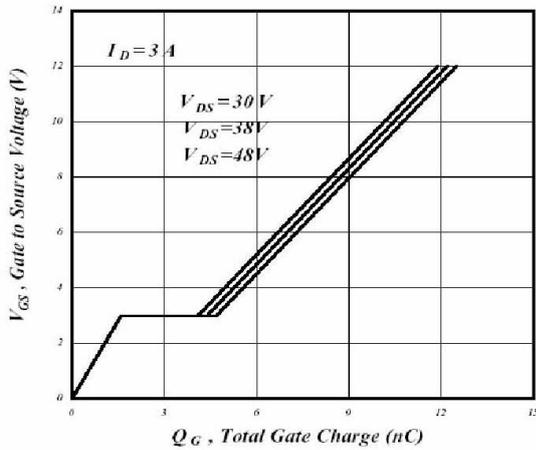


Fig 7. Gate Charge Characteristics

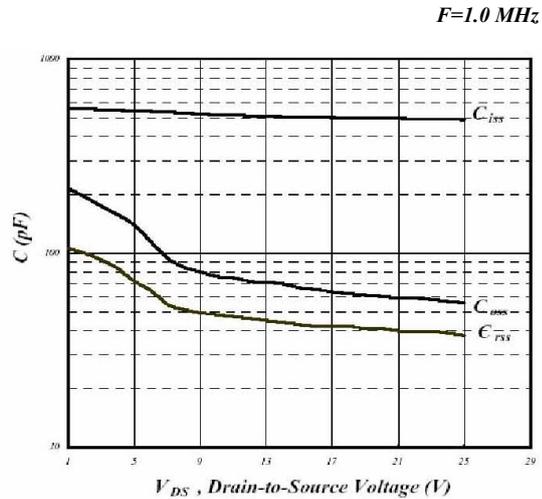


Fig 8. Typical Capacitance Characteristics

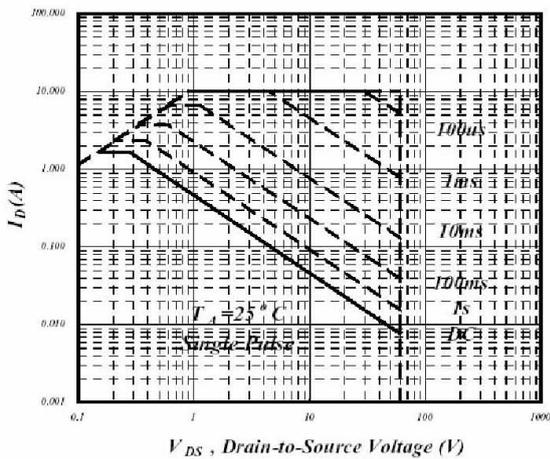


Fig 9. Maximum Safe Operating Area

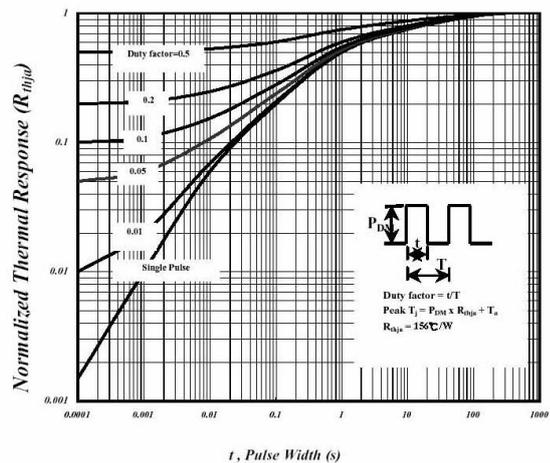


Fig 10. Effective Transient Thermal Impedance

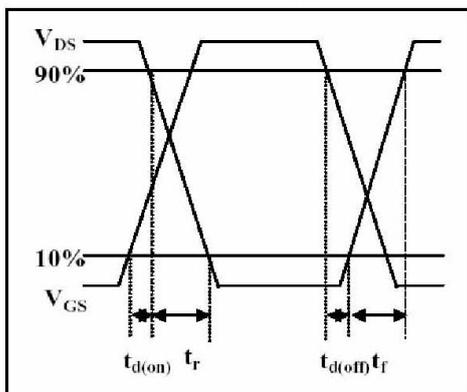


Fig 11. Switching Time Waveform

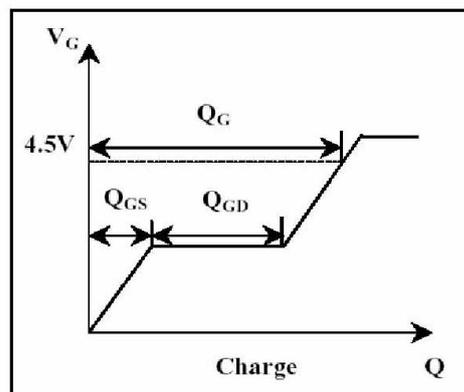


Fig 12. Gate Charge Waveform