SeCoS

Elektronische Bauelemente

SST2604

5.5A, 30V,R$_{DS(ON)}$ 45mΩ

N-Channel Enhancement Mode Power Mos.FET
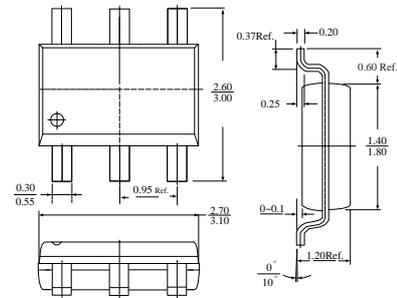
RoHS Compliant Product

SOT-26

Description

The SST2604 utiltzed advance processing techniques to achieve the lowest possible on-resistance, extermely efficient and cost-effectiveness device. The SST2604 is universally used for all commercial-industrial applications.
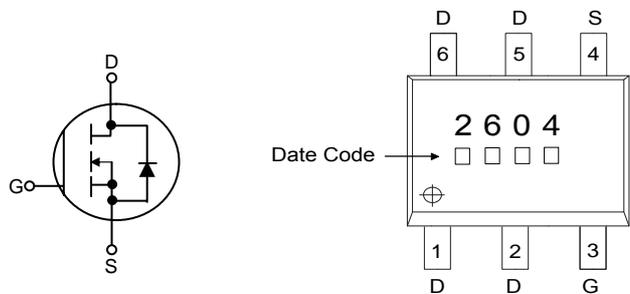

Dimensions in millimeters

Features

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

2 6 0 4

Date Code

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V$_{DS}$	30	V
Gate-Source Voltage	V$_{GS}$	±20	V
Continuous Drain Current,V$_{GS}$@4.5V [3]	I$_D$@T$_C$=25℃	5.5	A
Continuous Drain Current,V$_{GS}$@4.5V [3]	I$_D$@T$_C$=70℃	4.4	A
Pulsed Drain Current [1,2]	I$_{DM}$	20	A
Total Power Dissipation	P$_D$@T$_C$=25℃	2	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-case [3]	Max.	Rthj-c	62.5	℃/W

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Electrical Characteristics(Tj=25°C 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/^{o}C	Reference to 25°C, I_D=1mA
Gate Threshold 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°C)	I_{DSS}	–	–	1	uA	V_{DS}=30V,V_{GS}=0
Drain-Source Leakage Current(Tj=55°C)		–	–	25	uA	V_{DS}=24V,V_{GS}=0
Static Drain-Source On-Resistance[2]	$R_{DS(ON)}$	–	–	45	mΩ	V_{GS}=10V, I_D=4.8A
		–	–	65		V_{GS}=4.5V, I_D=2.4A
Total Gate Charge[2]	Qg	–	6	10	nC	I_D=4.8A V_{DS}=24V V_{GS}=4.5V
Gate-Source Charge	Qgs	–	2	–		
Gate-Drain ("Miller") Charge	Qgd	–	3	–		
Turn-on Delay Time[2]	$Td_{(ON)}$	–	6	–	nS	V_{DD}=15V I_D=1A V_{GS}=10V R_G=3.3Ω R_D=15Ω
Rise Time	Tr	–	8	–		
Turn-off Delay Time	$Td_{(Off)}$	–	15	–		
Fall Time	T_f	–	4	–		
Input Capacitance	Ciss	–	440	705	pF	V_{GS}=0V V_{DS}=25V f=1.0MHz
Output Capacitance	Coss	–	105	–		
Reverse Transfer Capacitance	Crss	–	35	–		
Forward Transconductance	Gfs	–	7	–	S	V_{DS}=10V, I_D=4.8A

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Forward On Voltage[2]	V_{SD}	–	–	1.2	V	I_S=4.8A, V_{GS}=0V.
Reverse Recovery Time[2]	Trr	–	15	–	nS	I_S=4.8A, V_{GS}=0V. dI/dt=100A/us
Reverse Recovery Change	Qrr	–	7	–	nC	

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

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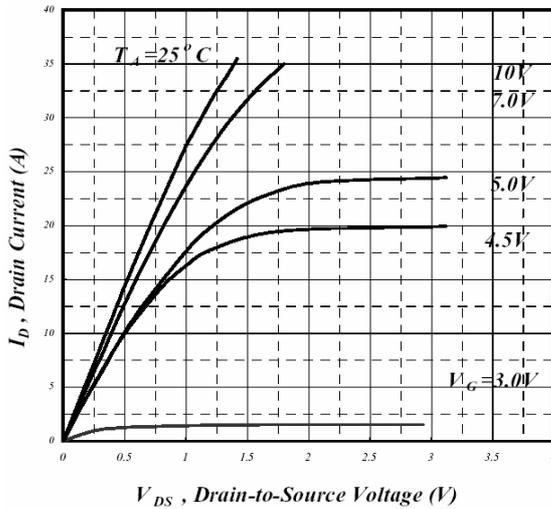
Characteristics Curve

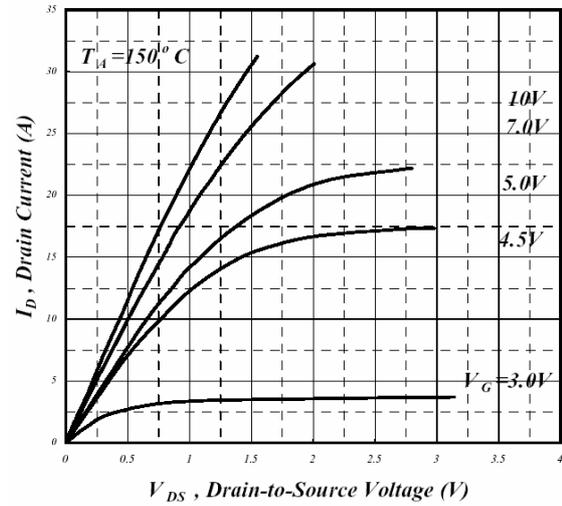**Fig 1. Typical Output Characteristics**

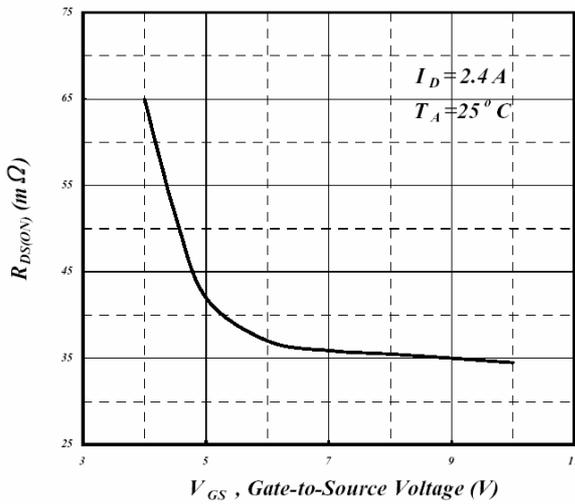**Fig 2. Typical Output Characteristics**
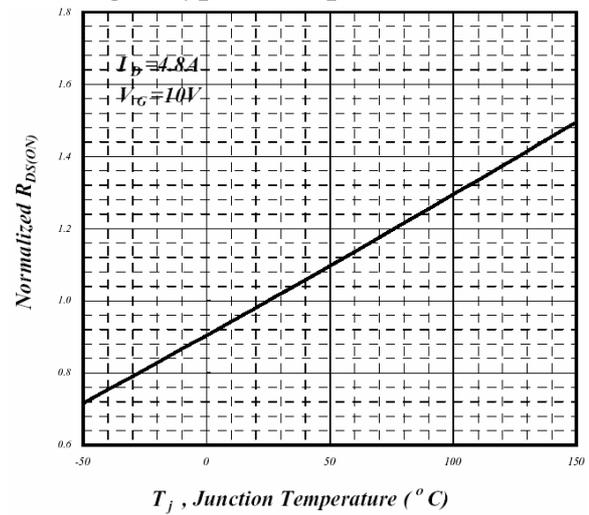

Fig 3. On-Resistance v.s. Gate Voltage

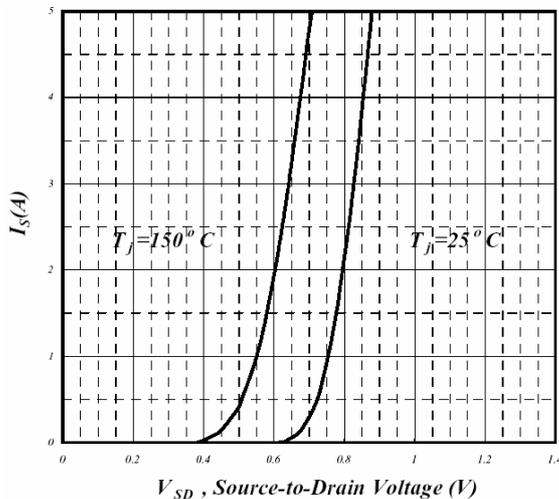**Fig 4. Normalized On-Resistance v.s. Junction Temperature**
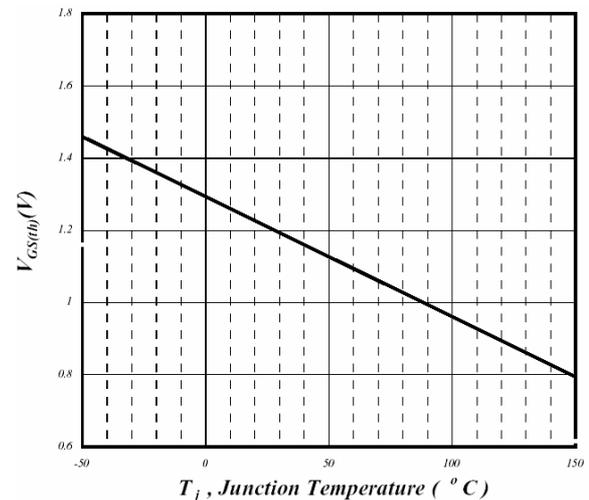

Fig 5. Forward Characteristics of Reverse Diode

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

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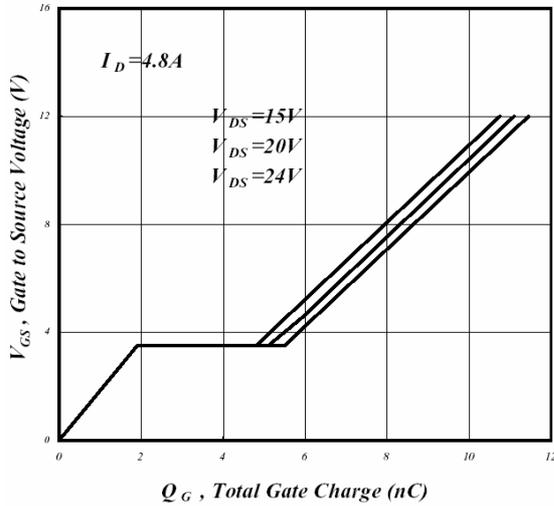
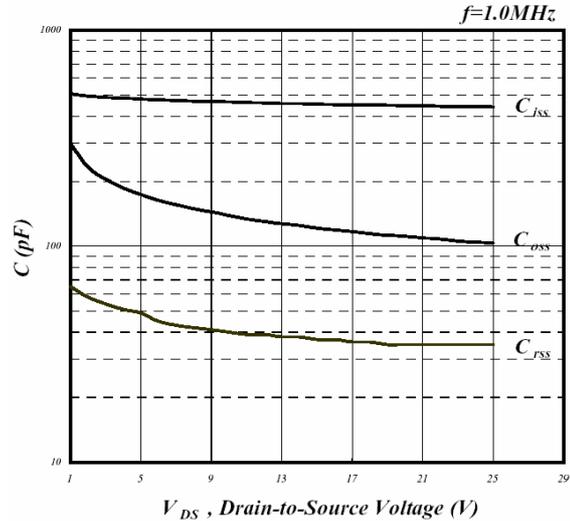**Fig 7. Gate Charge Characteristics**

Fig 8. Typical Capacitance Characteristics
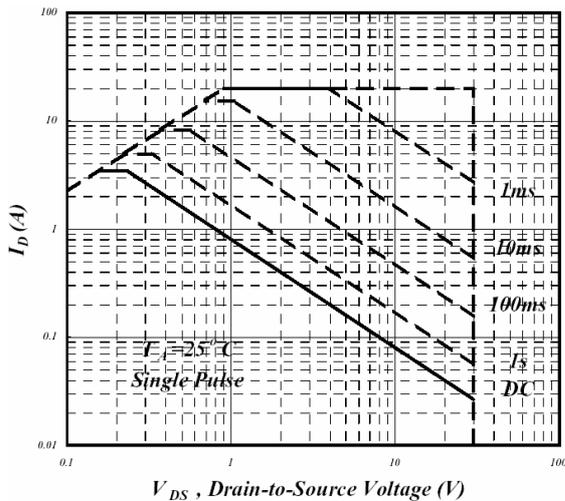

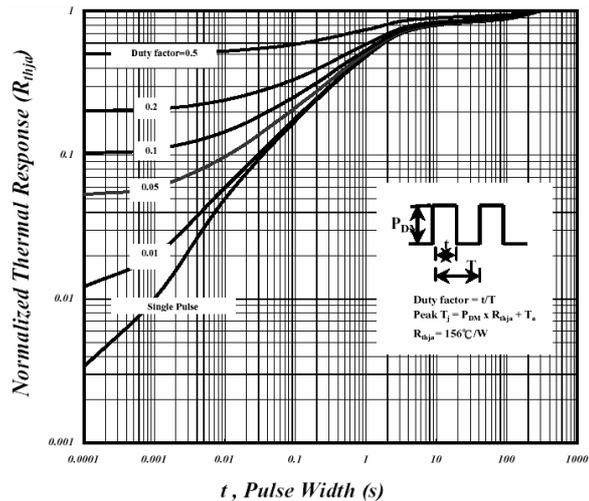**Fig 9. Maximum Safe Operating Area**
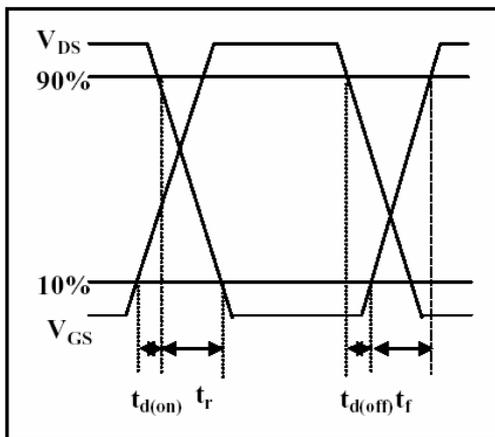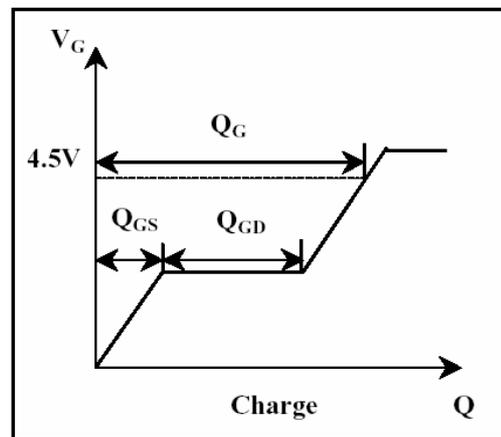

Fig 10. Effective Transient Thermal Impedance

Fig 11. Switching Time Waveform

Fig 12. Gate Charge Waveform