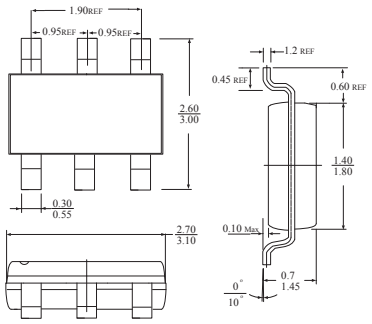
Elektronische Bauelemente

SST3585

3.5A, 20V,RDS(ON)75mΩ
-2.5A, -20V,RDS(ON)160mΩ
N And P-Channel Enhancement Mode Power Mos.FET

SOT-26



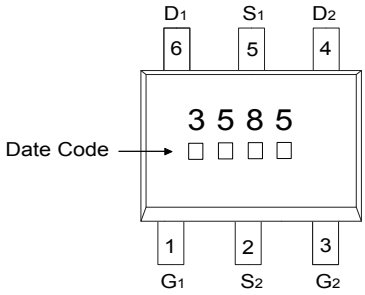
Dimensions in millimeters

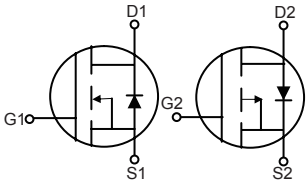
Description

The SST3585 provide the designer with best combination of fast switching,low on-resistance and cost effectiveness.
The SOT-26 package is universally used for all commercial-industrial surface mount applications.

Features

* RoHS Compliant
* Low Gate Charge
* Low On-resistance





Absolute Maximum Ratings

Parameter	Symbol	Ratings		Unit
Drain-Source Voltage	V_{DS}	20	-20	V
Gate-Source Voltage	V_{GS}	±12	±12	V
Continuous Drain Current[3]	I_D@T_A=25℃	3.5	-2.5	A
Continuous Drain Current[3]	I_D@T_A=70℃	2.8	-1.97	A
Pulsed Drain Current[1]	I_{DM}	10	-10	A
Total Power Dissipation	P_D@T_A=25	1.14		W
Linear Derating Factor		0.01		W/℃
Operating Junction and Storage Temperature Range	Tj, Tstg	-55~+150		℃

Thermal Data

Parameter		Symbo	Ratings	Unit
Thermal Resistance Junction-ambient[3]	Max.	Rthj-a	110	℃/W

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3.5A, 20V,RDS(ON)75mΩ
-2.5A, -20V,RDS(ON)160mΩ
N And P-Channel Enhancement Mode Power Mos.FET

N-Channel Electrical Characteristics(Tj=25°C Unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	BV_{DSS}	20	–	–	V	V_{GS}=0V, I_D=250uA
Breakdown Voltage Temp. Coefficient	$\triangle BV_{DS}/\triangle Tj$	–	0.02	–	V/°C	Reference to 25°C, I_D=-1mA
Gate Threshold Voltage	$V_{GS(th)}$	0.5	–	1.2	V	V_{DS}=V_{GS}, I_D=250uA
Gate-Source Leakage Current	I_{GSS}	–	–	±100	nA	V_{GS}=±12V
Drain-Source Leakage Current (Tj=25°C)	I_{DSS}	–	–	1	uA	V_{DS}=20V,V_{GS}=0
Drain-Source Leakage Current (Tj=70°C)		–	–	10	uA	V_{DS}=16V,V_{GS}=0
Static Drain-Source On-Resistance[2]	$R_{DS(ON)}$	–	–	75	mΩ	V_{GS}=4.5V, I_D=3.5A
		–	–	125		V_{GS}=2.5V, I_D=1.2A
Total Gate Charge[2]	Qg	–	4	7	nC	I_D=3A V_{DS}=16V V_{GS}=4.5V
Gate-Source Charge	Qgs	–	0.7	–		
Gate-Drain ("Miller") Charge	Qgd	–	2	–		
Turn-on Delay Time[2]	$T_{d(ON)}$	–	6	–	nS	V_{DS}=15V I_D=1A V_{GS}=5V R_G=3.3Ω R_D=15 Ω
Rise Time	Tr	–	8	–		
Turn-off Delay Time	$T_{d(Off)}$	–	10	–		
Fall Time	T_f	–	3	–		
Input Capacitance	Ciss	–	230	370	pF	V_{GS}=0V V_{DS}=20V f=1.0MHz
Output Capacitance	Coss	–	55	–		
Reverse Transfer Capacitance	Crss	–	40	–		
Forward Transconductance	Gfs	–	7	–	S	V_{DS}=5V, I_D=3A
Gate Resistance	Rg	–	1.1	1.7	Ω	f=1.0MHz

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Forward On Voltage[2]	V_{DS}	–	–	1.2	V	I_S=1.2A , V_{GS}=0V.
Reverse Recovery Time	Trr	–	16	–	nS	Is=3A, V_{GS}=0V dl/dt=100A/us
Reverse Recovery Charge	Qrr	–	8	–	nC	

Notes: 1.Pulse width limited by Max. junction temperature.
2.Pulse width≦300us, dutycycle≦2%.
3.Surface mounted on 1 in² copper pad of FR4 board; 1≦5sec;180°C/W when mounted on Min. copper pad.

P-Channel Electrical Characteristics(Tj=25°C Unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	BV_{DSS}	-20	–	–	V	V_{GS}=0V, I_D=-250uA
Breakdown Voltage Temp. Coefficient	$\triangle BV_{DS}/\triangle Tj$	–	-0.01	–	V/°C	Reference to 25°C, I_D=-1mA
Gate Threshold Voltage	$V_{GS(th)}$	–	–	-1.2	V	V_{DS}=V_{GS}, I_D=-250uA
Gate-Source Leakage Current	I_{GSS}	–	–	±100	nA	V_{GS}=±12V
Drain-Source Leakage Current (Tj=25°C)	I_{DSS}	–	–	-1	uA	V_{DS}=-20V,V_{GS}=0
Drain-Source Leakage Current (Tj=70°C)		–	–	-25	uA	V_{DS}=-16V,V_{GS}=0
Static Drain-Source On-Resistance[2]	$R_{DS(ON)}$	–	–	120	mΩ	V_{GS}=-10V, I_D=-2.8A
		–	–	160		V_{GS}=-4.5V, I_D=-2.5A
		–	–	300		V_{GS}=-2.5V, I_D=-2A
Total Gate Charge[2]	Qg	–	5	8	nC	I_D=-2A V_{DS}=-16V V_{GS}=-4.5V
Gate-Source Charge	Qgs	–	1	–		
Gate-Drain ("Miller") Charge	Qgd	–	2	–		
Turn-on Delay Time[2]	$Td_{(ON)}$	–	6	–	nS	V_{DS}=-10V I_D=-1A V_{GS}=-10V R_G=3.3Ω R_D=10Ω
Rise Time	Tr	–	17	–		
Turn-off Delay Time	$Td_{(Off)}$	–	16	–		
Fall Time	T_f	–	5	–		
Input Capacitance	Ciss	–	270	430	pF	V_{GS}=0V V_{DS}=-20V f=1.0MHz
Output Capacitance	Coss	–	70	–		
Reverse Transfer Capacitance	Crss	–	55	–		
Forward Transconductance	Gfs	–	4	–	S	V_{DS}=-5V, I_D=-2A

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Forward On Voltage[2]	V_{DS}	–	–	-1.2	V	I_S=-1.2A,V_{GS}=0V.
Reverse Recovery Time[2]	Trr	–	20	–	nS	Is=-2A, V_{GS}=0V dI/dt=100A/uS
Reverse Recovery Charge	Qrr	–	15	–	nC	

Notes: 1.Pulse width limited by Max. junction temperature.
2.Pulse width≦300us, dutycycle≦2%.
3.Surface mounted on 1 in² copper pad of FR4 board; 1≦5sec;180°C/W when mounted on Min. copper pad.

Characteristics Curve N-Channel

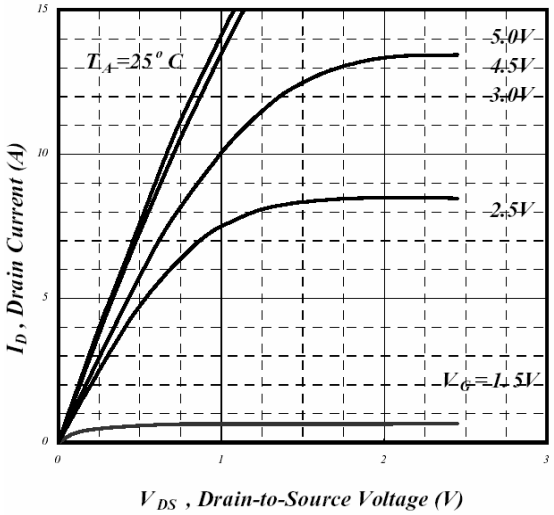

Fig 1. Typical Output Characteristics

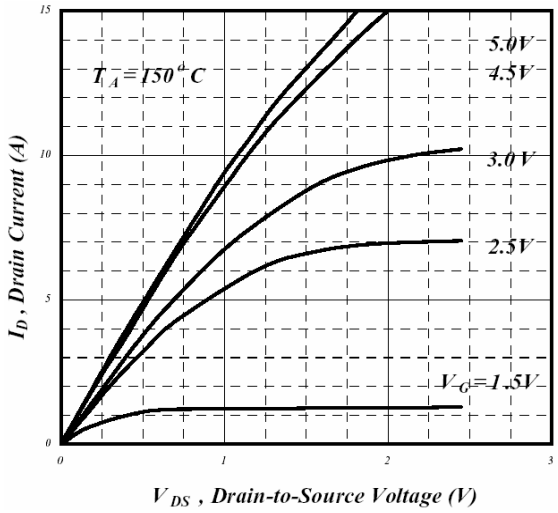

Fig 2. Typical Output Characteristics

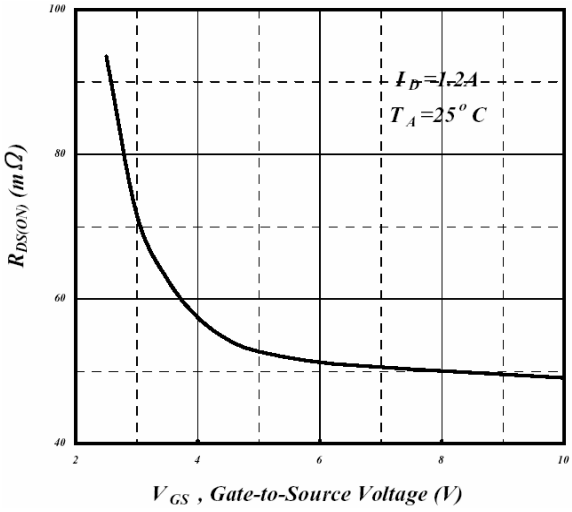

Fig 3. On-Resistance v.s. Gate Voltage

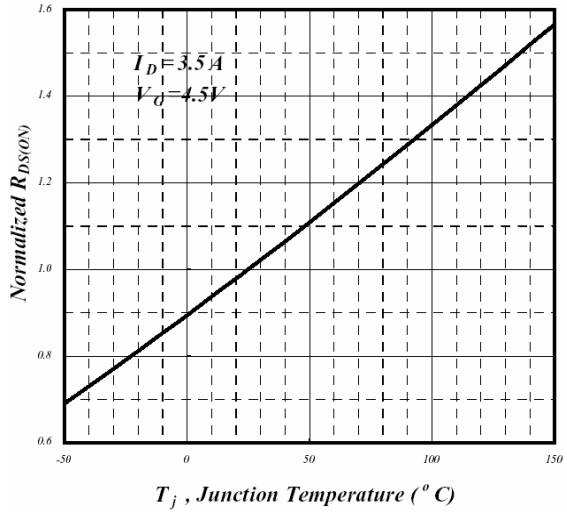

Fig 4. Normalized On-Resistance v.s. Junction Temperature

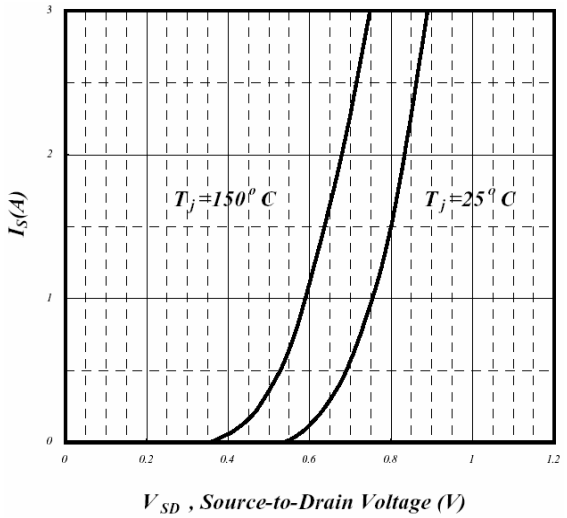

Fig 5. Forward Characteristics of Reverse Diode

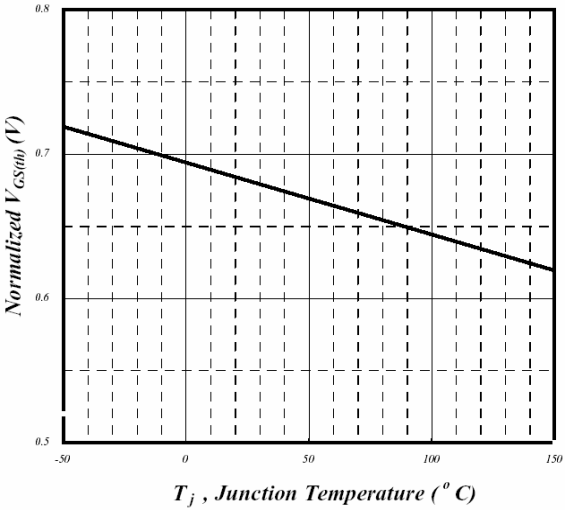

Fig 6. Gate Threshold Voltage v.s. Junction Temperature

N-Channel

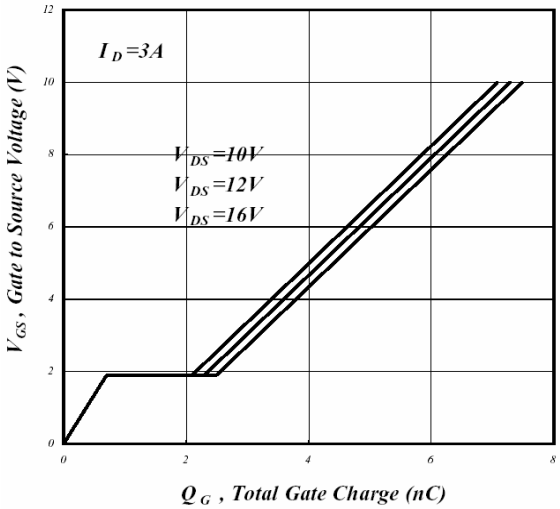

Fig 7. Gate Charge Characteristics

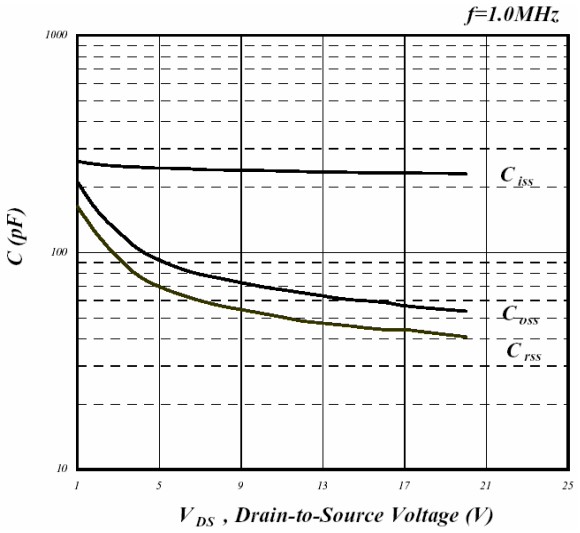

Fig 8. Typical Capacitance Characteristics

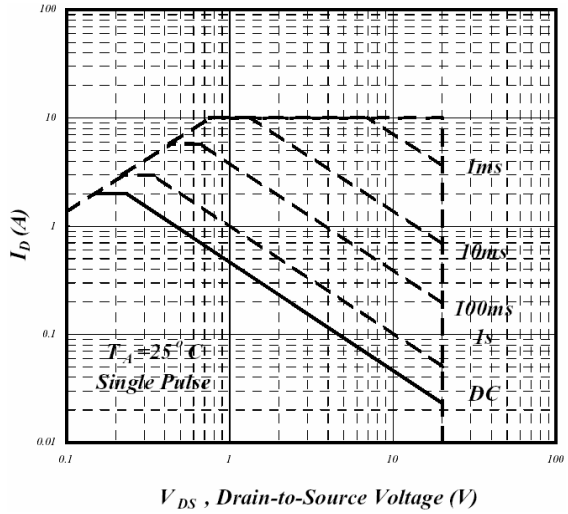

Fig 9. Maximum Safe Operating Area

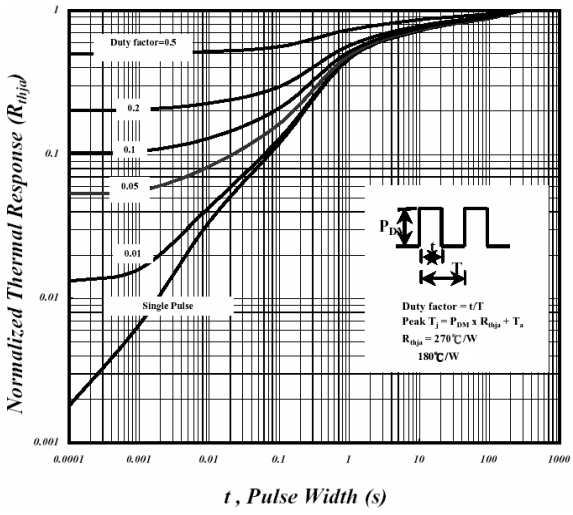

Fig 10. Effective Transient Thermal Impedance

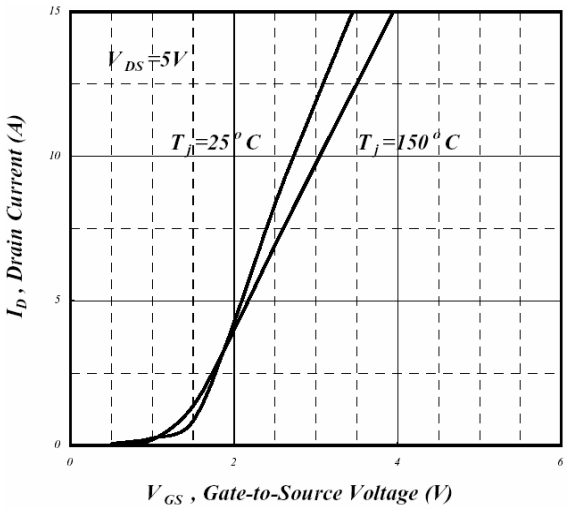

Fig 11. Transfer Characteristics

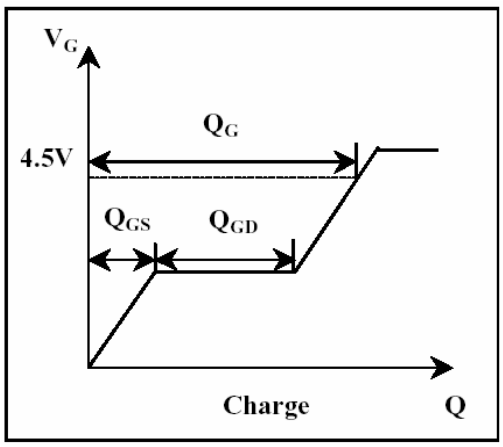

Fig 12. Gate Charge Waveform

P-Channel

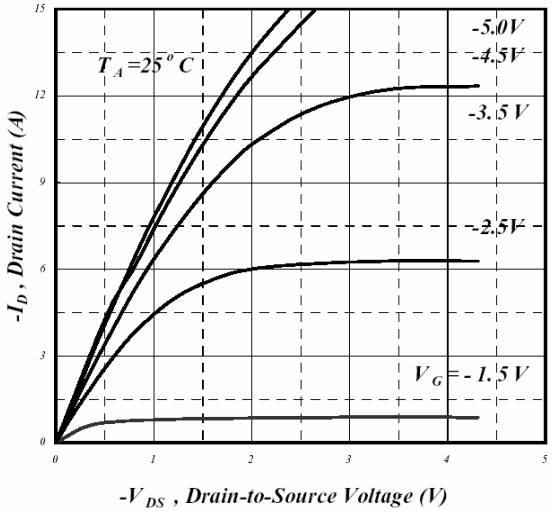

Fig 1. Typical Output Characteristics

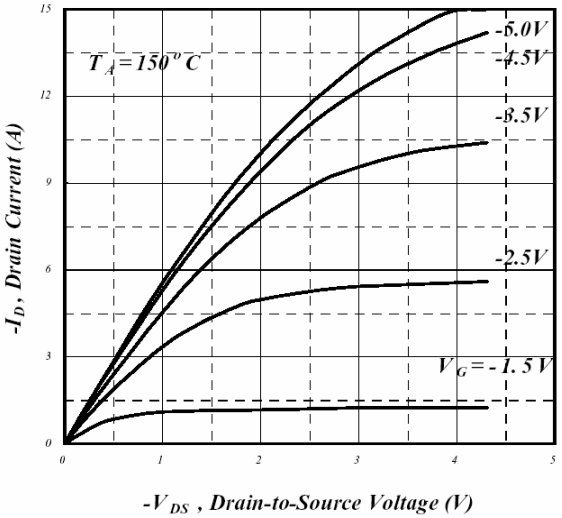

Fig 2. Typical Output Characteristics

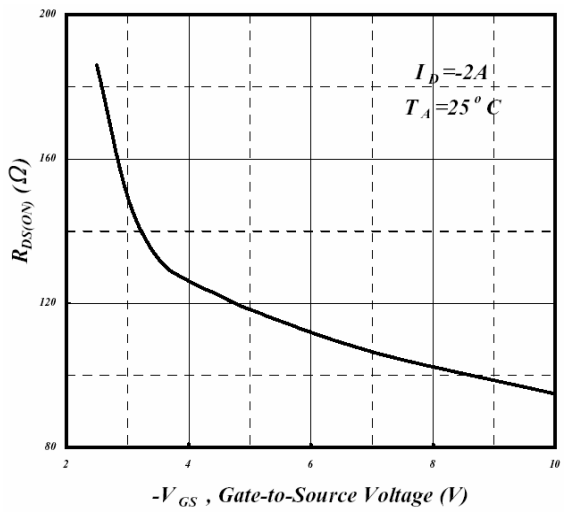

Fig 3. On-Resistance v.s. Gate Voltage

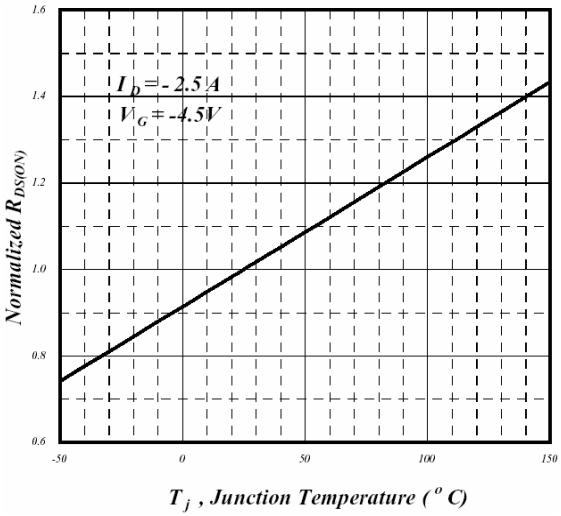

Fig 4. Normalized On-Resistance v.s. Junction Temperature

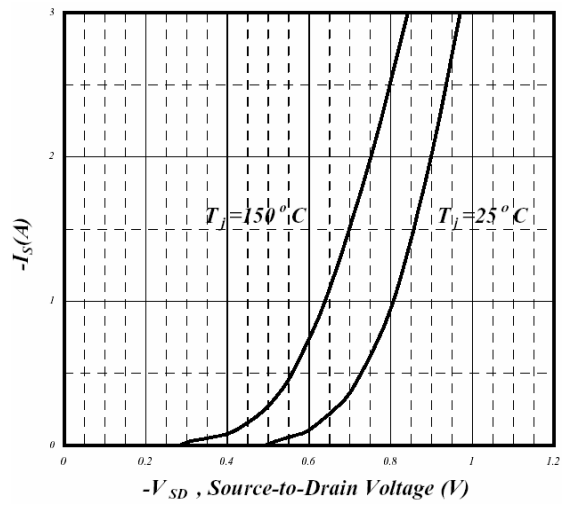

Fig 5. Forward Characteristics of Reverse Diode

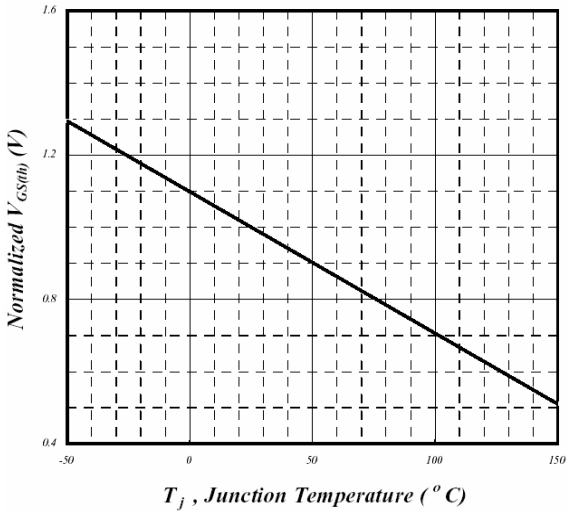

Fig 6. Gate Threshold Voltage v.s. Junction Temperature

P-Channel

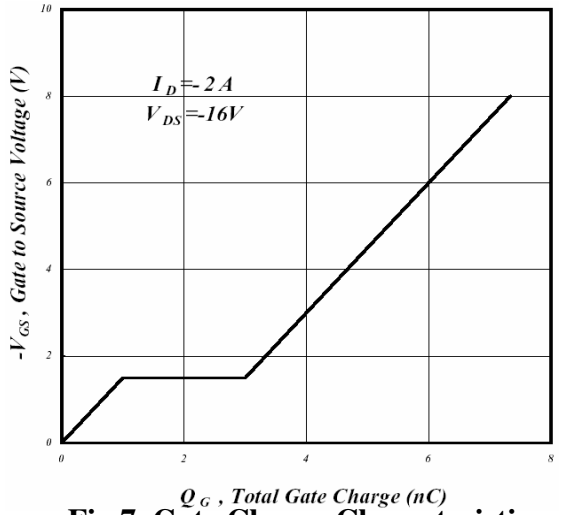

Fig 7. Gate Charge Characteristics

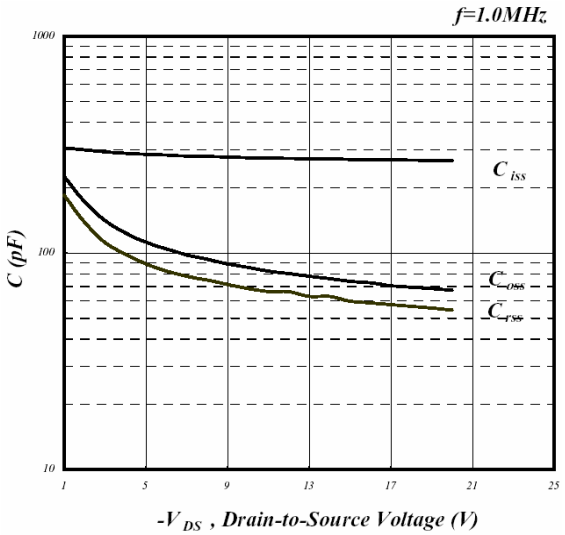

Fig 8. Typical Capacitance Characteristics

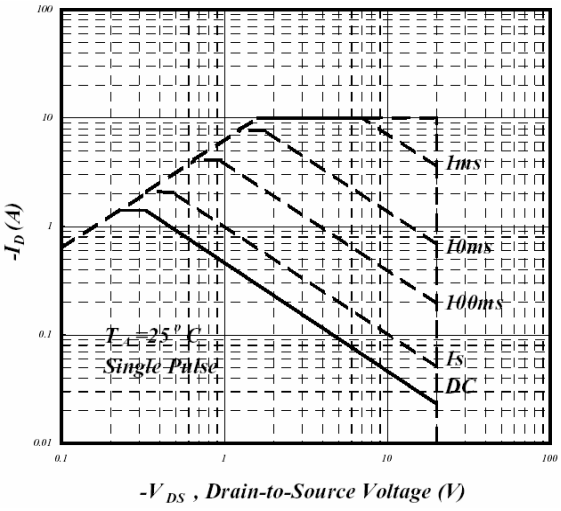

Fig 9. Maximum Safe Operating Area

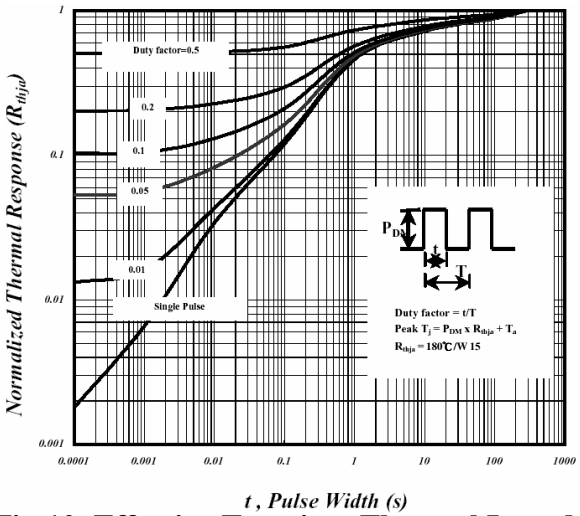

Fig 10. Effective Transient Thermal Impedance

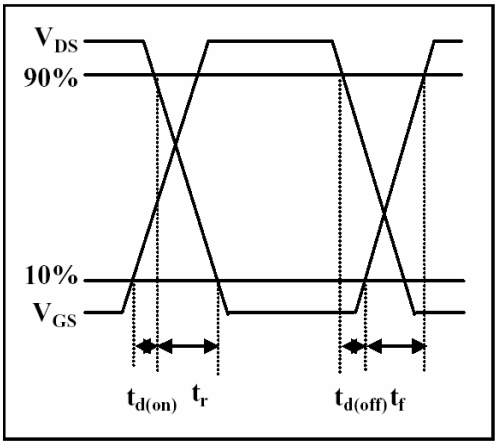

Fig 11. Switching Time Waveform

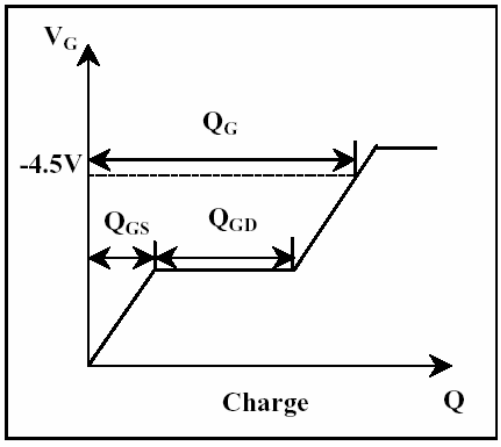

Fig 12. Gate Charge Waveform