

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

DESCRIPTION

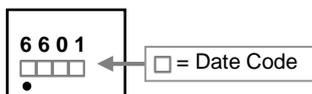
The SST6601 provide the designer with best combination of fast switching, low on-resistance and cost effectiveness.

The SOT-26 package is universally used for all commercial-industrial surface mount applications.

FEATURES

- Low Gate Charge
- Low On-resistance

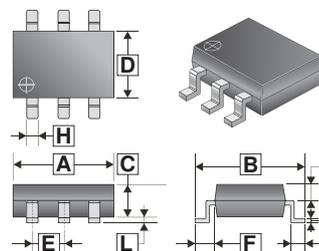
MARKING CODE



PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-26	3K	7 inch

SOT-26

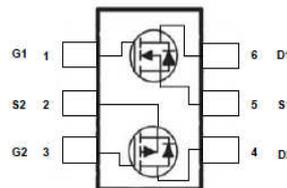


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0.37 REF.	
B	2.60	3.00	H	0.30	0.55
C	1.20 REF.		J	-	-
D	1.40	1.80	K	0.12 REF.	
E	0.95 REF.		L	-	0.10
F	0.60 REF.				

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Ratings		Unit	
		N-Channel	P-Channel		
Drain-Source Voltage	V _{DS}	30	-30	V	
Gate-Source Voltage	V _{GS}	±12	±12	V	
Continuous Drain Current ³	I _D	T _A = 25°C	3.4	-2.3	A
		T _A = 70°C	2.7	-1.8	
Pulsed Drain Current ¹	I _{DM}	12	-10	A	
Power Dissipation	P _D	1.14		W	
Maximum Junction to Ambient ³	R _{θJA}	110		°C / W	
Linear Derating Factor		0.01		W / °C	
Operating Junction & Storage Temperature Range	T _J , T _{STG}	-55~150		°C	

TOP VIEW



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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions	
Static							
Drain-Source Breakdown Voltage	N-Ch	BV _{DSS}	30	-	-	V	V _{GS} =0, I _D =250μA
	P-Ch		-30	-	-		V _{GS} =0, I _D = -250μA
Gate-Threshold Voltage	N-Ch	V _{GS(th)}	0.5	-	1.5	V	V _{DS} =V _{GS} , I _D =250μA
	P-Ch		-0.6	-	-1.4		V _{DS} =V _{GS} , I _D = -250μA
Forward Transconductance	N-Ch	g _{fs}	-	5	-	S	V _{DS} =5V, I _D =3.4A
	P-Ch		-	5	-		V _{DS} = -5V, I _D = -2.3A
Gate-Source Leakage Current	N-Ch	I _{GSS}	-	-	±100	nA	V _{GS} = ±12V
	P-Ch		-	-	±100		V _{GS} = ±12V
Drain-Source Leakage Current	N-Ch	I _{DSS}	-	-	1	μA	V _{DS} =30V, V _{GS} =0
	P-Ch		-	-	-1		V _{DS} = -30 V, V _{GS} =0
	N-Ch		-	-	5		V _{DS} =24V, V _{GS} =0
	P-Ch		-	-	-5		V _{DS} = -24V, V _{GS} =0
Drain-Source On-Resistance ²	N-Ch	R _{DS(ON)}	-	-	55	mΩ	V _{GS} =10V, I _D =3.4A
	P-Ch		-	-	115		V _{GS} = -10V, I _D = -2.3A
	N-Ch		-	-	70		V _{GS} =4.5V, I _D =2.8A
	P-Ch		-	-	150		V _{GS} = -4.5V, I _D = -2A
	N-Ch		-	-	110		V _{GS} =2.5V, I _D =1A
	P-Ch		-	-	200		V _{GS} = -2.5V, I _D = -1A
Total Gate Charge ²	N-Ch	Q _g	-	4.7	-	nC	N-Channel V _{DS} =15V, V _{GS} =4.5V, I _D =3.4A
	P-Ch		-	3.1	-		
Gate-Source Charge	N-Ch	Q _{gs}	-	1.58	-	nC	P-Channel V _{DS} = -15V, V _{GS} = -4.5V, I _D = -2.3A
	P-Ch		-	1.34	-		
Gate-Drain ("Miller") Charge	N-Ch	Q _{gd}	-	0.92	-	nC	P-Channel V _{DS} = -15V, V _{GS} = -4.5V, I _D = -2.3A
	P-Ch		-	0.72	-		
Turn-on Delay Time ²	N-Ch	T _{d(on)}	-	4	-	nS	N-Channel V _{DS} =15V, R _G =6Ω, R _L =5Ω V _{GS} =10V
	P-Ch		-	13	-		
Rise Time	N-Ch	T _r	-	2	-	nS	P-Channel V _{DS} = -15V, R _G =6Ω, R _D =6Ω V _{GS} = -10V
	P-Ch		-	10	-		
Turn-off Delay Time	N-Ch	T _{d(off)}	-	22	-	nS	P-Channel V _{DS} = -15V, R _G =6Ω, R _D =6Ω V _{GS} = -10V
	P-Ch		-	28	-		
Fall Time	N-Ch	T _f	-	3	-	nS	P-Channel V _{DS} = -15V, R _G =6Ω, R _D =6Ω V _{GS} = -10V
	P-Ch		-	13	-		
Input Capacitance	N-Ch	C _{iss}	-	451	-	pF	N-Channel V _{GS} =0, V _{DS} =15V, f=1.0MHz
	P-Ch		-	456	-		
Output Capacitance	N-Ch	C _{oss}	-	32	-	pF	P-Channel V _{GS} =0, V _{DS} = -15V, f=1.0MHz
	P-Ch		-	44	-		
Reverse Transfer Capacitance	N-Ch	C _{rss}	-	26	-	pF	P-Channel V _{GS} =0, V _{DS} = -15V, f=1.0MHz
	P-Ch		-	37	-		
Gate Resistance	N-Ch	R _g	-	2	3.5	Ω	f=1.0MHz
	P-Ch		-	6.2	7.5		

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions	
Source-Drain Diode							
Forward On Voltage ²	N-Ch	V _{SD}	-	-	1	V	I _S =1A, V _{GS} =0
	P-Ch		-	-	-1		I _S = -1A, V _{GS} =0
Reverse Recovery Time	N-Ch	T _{RR}	-	11	-	ns	I _S =3.4A, V _{GS} =0 ,dI/dt=100A/μs
	P-Ch		-	16	-		I _S = -2.3A, V _{GS} =0 ,dI/dt=100A/μs
Reverse Recovery Charge	N-Ch	Q _{rr}	-	5.5	-	nC	I _S =3.4A, V _{GS} =0 ,dI/dt=100A/μs
	P-Ch		-	7.6	-		I _S = -2.3A, V _{GS} =0 ,dI/dt=100A/μs
Continuous Source Current (Body Diode)	N-Ch	I _S	-	-	1.5	A	
	P-Ch		-	-	-1.5		

Notes:

- 1 Pulse width limited by Max. junction temperature.
- 2 Pulse width ≤ 300μs, duty cycle ≤ 2%.
- 3 Surface mounted on 1 in² copper pad of FR4 board; t ≤ 5 sec. 180°C/W when mounted on min. copper pad.

CHARACTERISTICS CURVE (N-Channel)

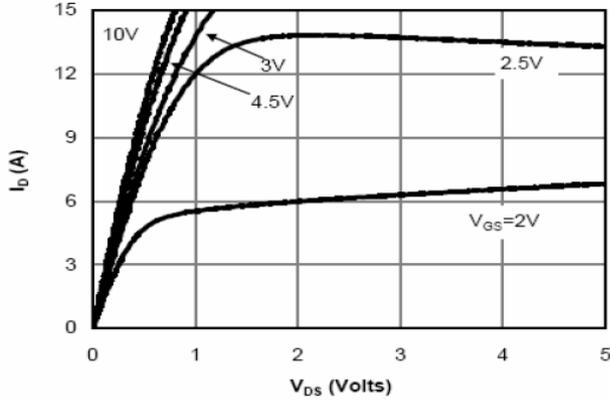


Fig 1. Typical Output Characteristics

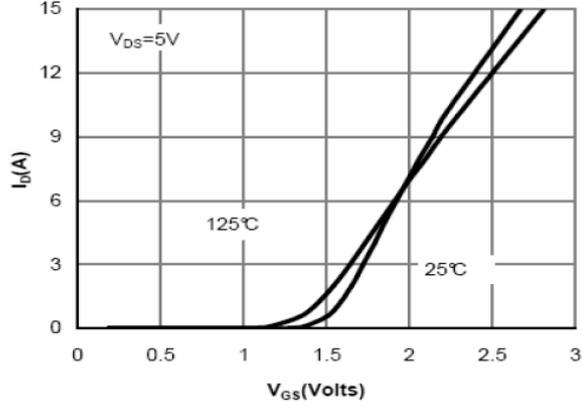


Fig 2. Transfer Characteristics

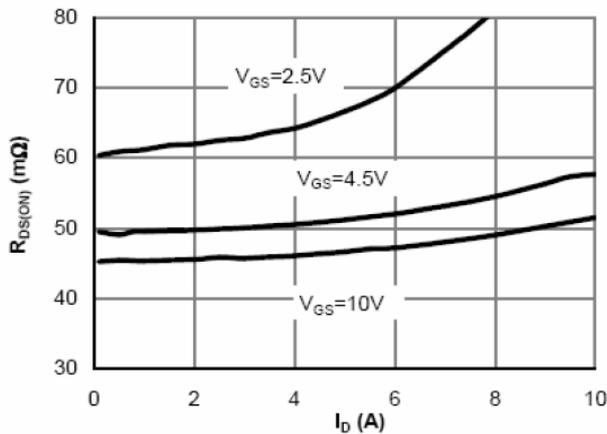


Fig 3. On-Resistance vs. Drain Current and Gate Voltage

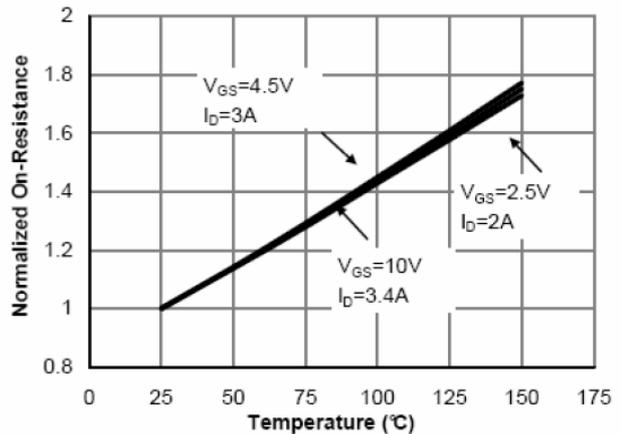


Fig 4. On-Resistance vs. Junction Temperature

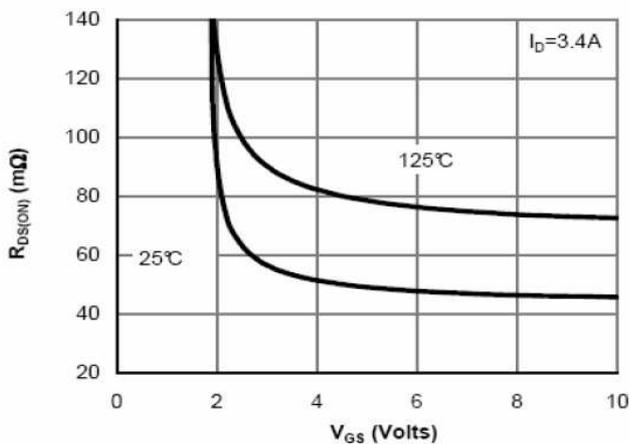


Fig 5. On-Resistance vs. Gate-Source Voltage

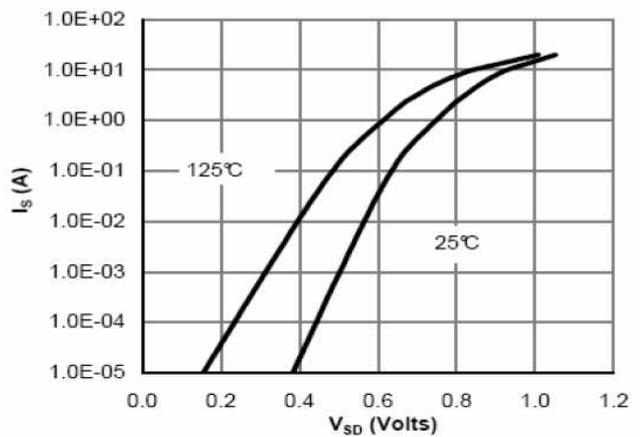


Fig 6. Body Diode Characteristics

CHARACTERISTICS CURVE (N-Channel)

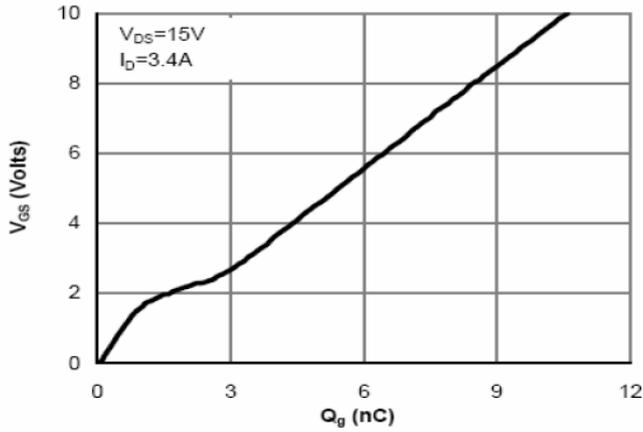


Fig 7. Gate Charge Characteristics

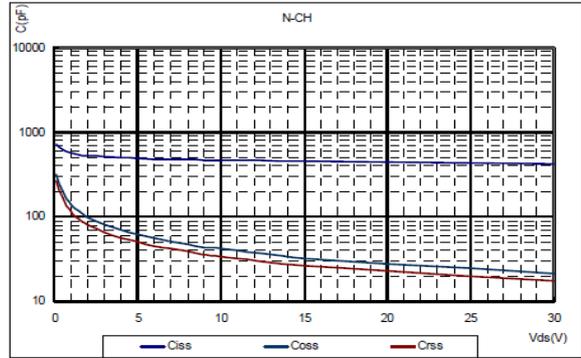


Fig 8. Typical Capacitance Characteristics

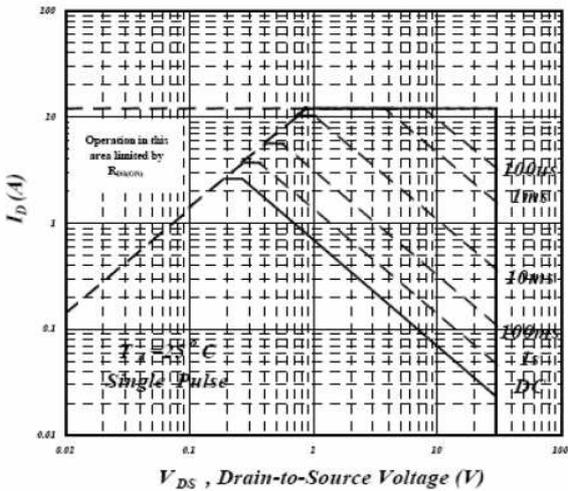


Fig 9. Maximum Safe Operating Area

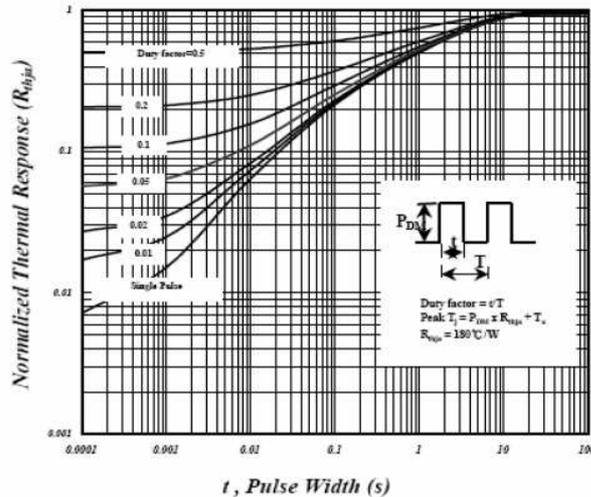


Fig 10. Effective Transient Thermal Impedance

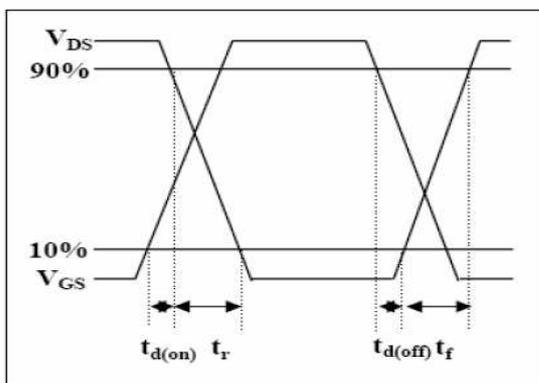


Fig 11. Switching Time Waveform

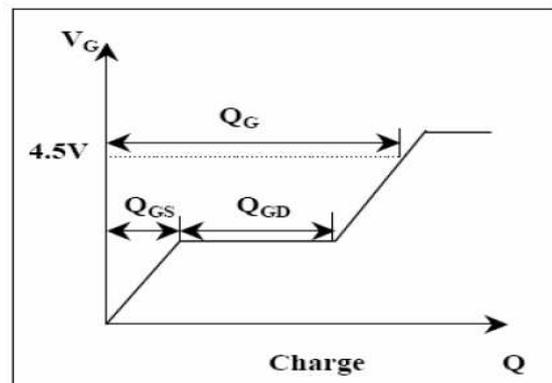


Fig 12. Gate Charge Waveform

CHARACTERISTICS CURVE (P-Channel)

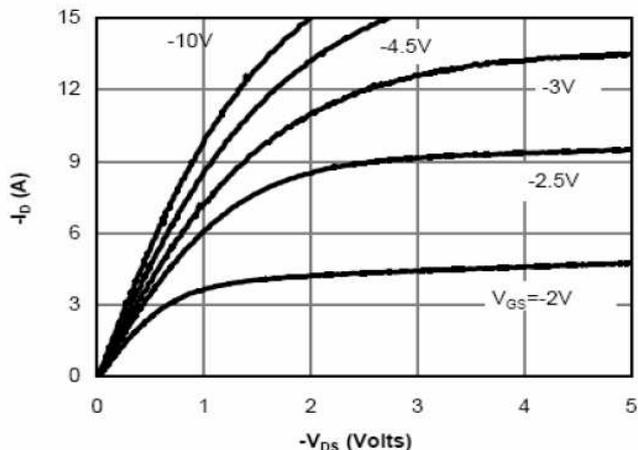


Fig 1. Typical Output Characteristics

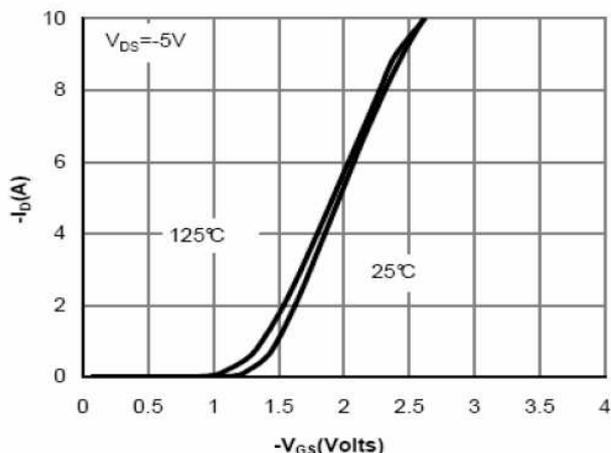


Fig 2. Transfer Characteristics

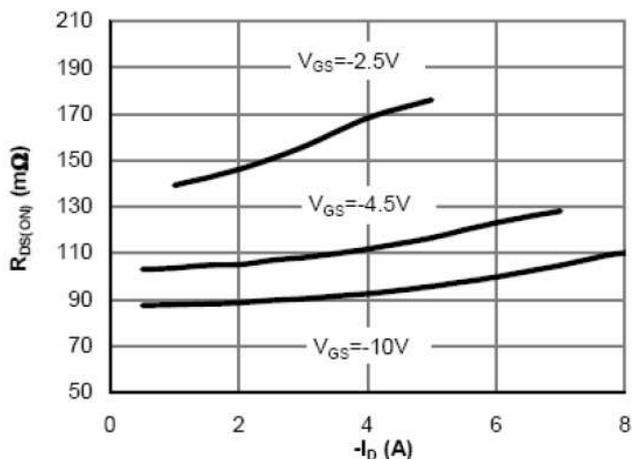


Fig 3. On-Resistance vs. Drain Current and Gate Voltage

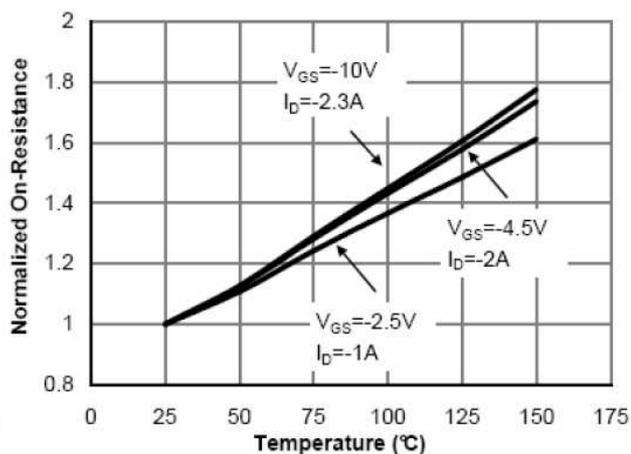


Fig 4. On-Resistance vs. Junction Temperature

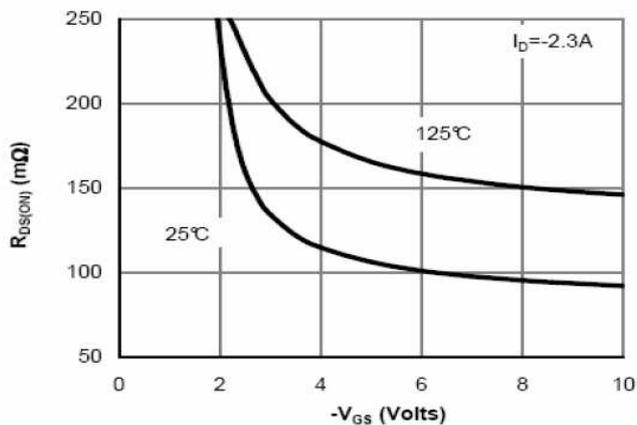


Fig 5. On-Resistance vs. Gate-Source Voltage

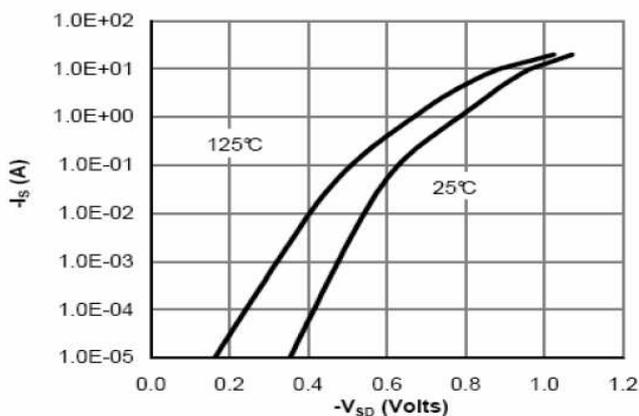


Fig 6. Body Diode Characteristics

CHARACTERISTICS CURVE (P-Channel)

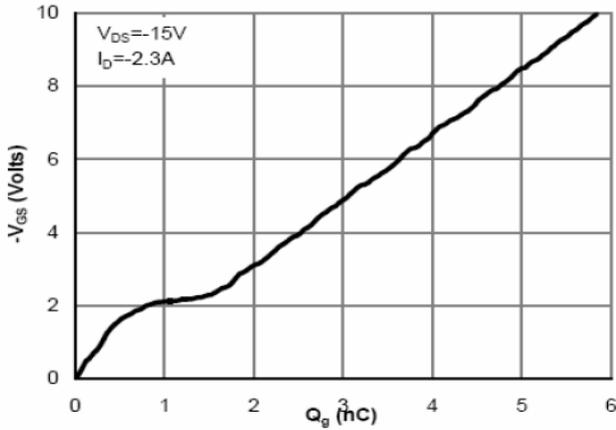


Fig 7. Gate Charge Characteristics

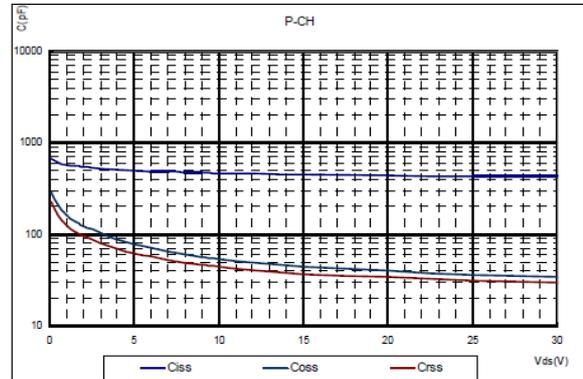


Fig 8. Typical Capacitance Characteristics

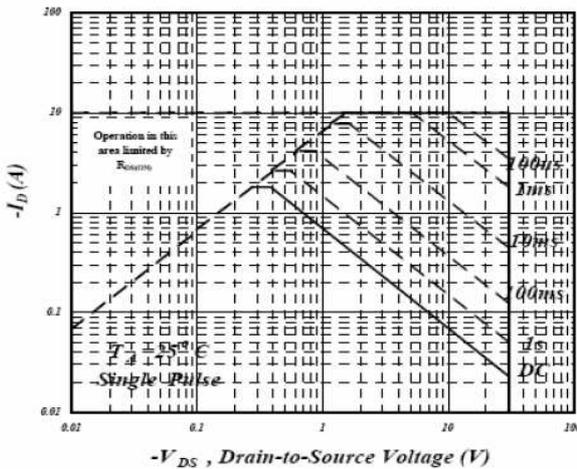


Fig 9. Maximum Safe Operating Area

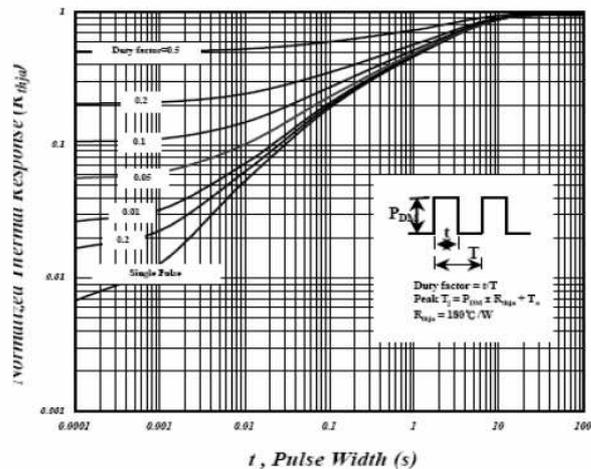


Fig 10. Effective Transient Thermal Impedance

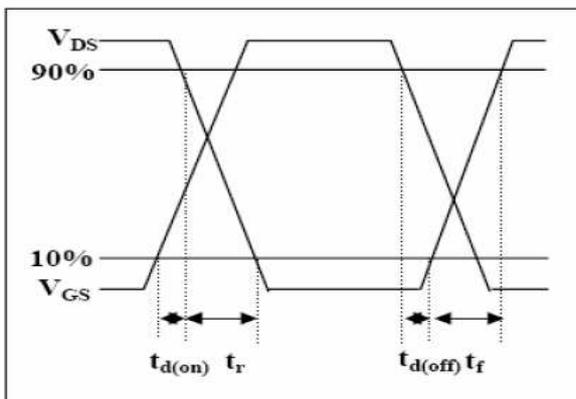


Fig 11. Switching Time Waveform

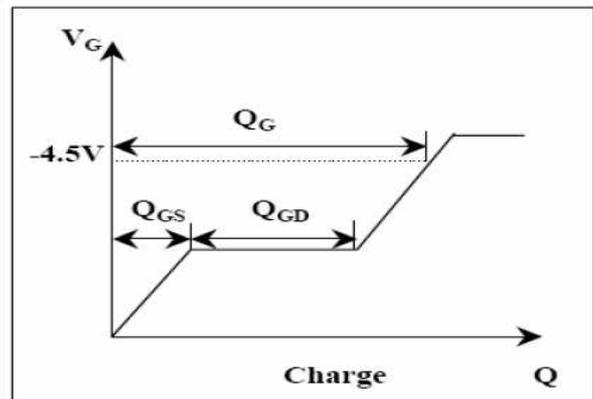


Fig 12. Gate Charge Waveform