Elektronische Bauelemente

SCG2035-C

0.65A, 20V, $R_{DS(ON)}$ 350mΩ
N-Ch Enhancement Mode Power MOSFET

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

FEATURES

- Reliable and Rugged
- Green Device Available
- ESD Protected: 2kV

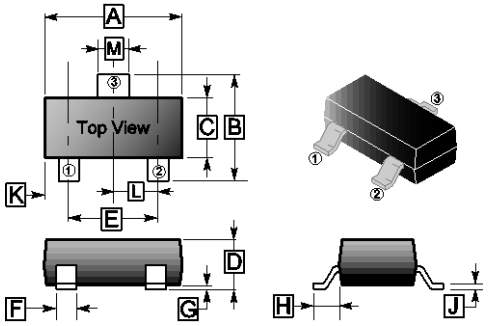
APPLICATION

- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems.

MARKING

G5

SOT-523



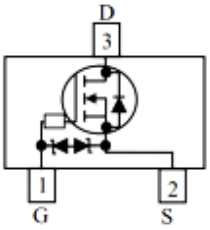
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.50	1.70	G	-	0.10
B	1.45	1.75	H	0.55 REF.	
C	0.70	0.90	J	0.08	0.20
D	0.60	0.90	K	-	
E	0.90	1.10	L	0.50 TYP.	
F	0.15	0.35	M	0.25	0.40

PACKAGE INFORMATION

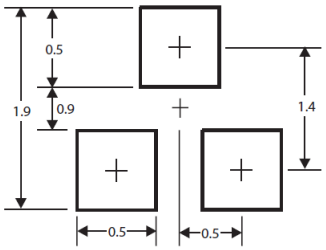
Package	MPQ	Leader Size
SOT-523	3K	7 inch

ORDER INFORMATION

Part Number	Type
SCG2035-C	Lead (Pb)-free and Halogen-free



Mounting Pad Layout



*Dimensions in millimeters

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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current [1] @V_{GS}=4.5V	T_A=25°C	I_D	0.65	A
	T_A=70°C		0.52	
Pulsed Drain Current [3]		I_{DM}	1.6	A
Power Dissipation	T_A=25°C	P_D	0.3	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Resistance Rating				
Thermal Resistance from Junction-Ambient [1]		$R_{\theta JA}$	417	°C/W
Thermal Resistance from Junction-Ambient [2]			833	

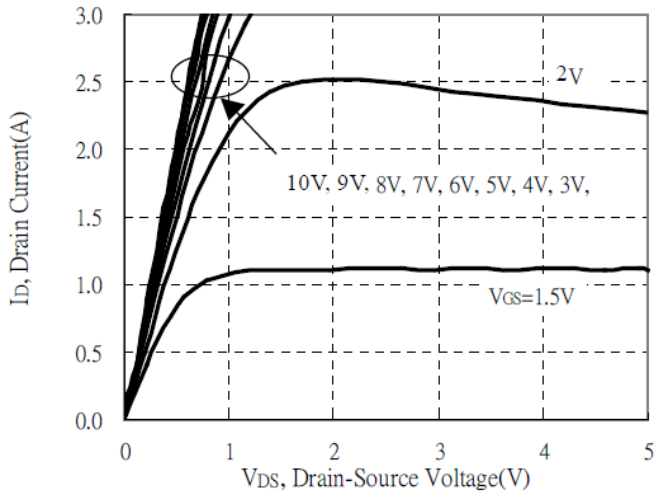
ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage		BV_{DSS}	20	-	-	V	V_{GS}=0, I_D=250μA
Gate Threshold Voltage		$V_{GS(th)}$	0.45	-	1	V	V_{DS}=V_{GS}, I_D=250μA
Forward Transfer conductance		g_{fs}	-	2	-	S	V_{DS}=5V, I_D=0.6A
Gate-Body Leakage Current		I_{GSS}	-	-	±10	μA	V_{GS}= ±12V
Drain-Source Leakage Current	T_J=25°C	I_{DSS}	-	-	1	μA	V_{GS}=0, V_{DS}=16V
	T_J=70°C		-	-	25		
Static Drain-Source On-Resistance [4]		$R_{DS(ON)}$	-	-	350	mΩ	V_{GS}=4.5V, I_D=0.55A
			-	-	700		V_{GS}=2.5V, I_D=0.45A
			-	-	950		V_{GS}=1.8V, I_D=0.35A
Total Gate Charge		Q_g	-	1.3	-	nC	I_D=0.5A V_{DS}=15V V_{GS}=4.5V
Gate-Source Charge		Q_{gs}	-	0.5	-		
Gate-Drain (“Miller”) Change		Q_{gd}	-	0.1	-		
Turn-on Delay Time		$T_{d(on)}$	-	2.6	-	nS	V_{DS}=10V I_D=0.5A V_{GS}=10V R_G=1Ω
Rise Time		T_r	-	16	-		
Turn-off Delay Time		$T_{d(off)}$	-	29.8	-		
Fall Time		T_f	-	11	-		
Input Capacitance		C_{iss}	-	64	-	pF	V_{DS}=10V V_{GS}=0 f=1MHz
Output Capacitance		C_{oss}	-	17	-		
Reverse Transfer Capacitance		C_{rss}	-	20	-		
Source-Drain Diode							
Continuous Source Current [1]		I_S	-	-	0.65	A	
Pulsed Source Current [3]		I_{SM}	-	-	1.6	A	
Forward On Voltage [4]		V_{SD}	-	-	1.2	V	V_{GS}=0, I_S=0.15A
Reverse Recovery Time		t_{rr}	-	4.9	-	nS	I_F=0.5A, dI/dt=100A/μs, T_J=25°C
Reverse Recovery Charge		Q_{rr}	-	1	-	nC	

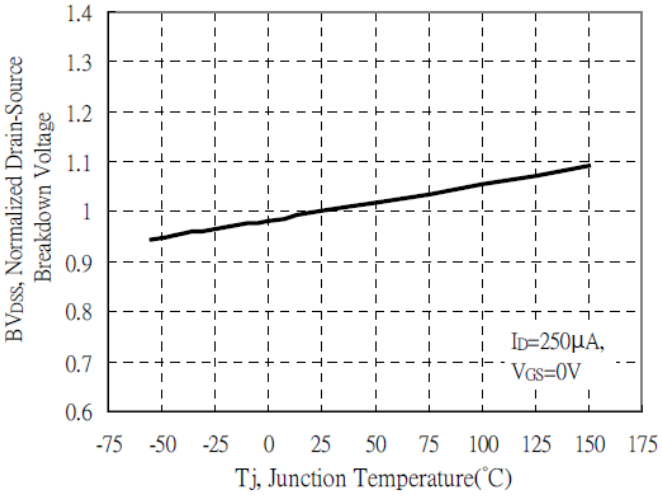
Notes:
1. Surface mounted on a 1 inch^2 FR-4 board with 2oz copper.
2. When mounted on Min. copper pad.
3. The power dissipation is limited by 150°C junction temperature.
4. The data tested by pulsed, pulse width≦300us, duty cycle≦2%.

TYPICAL CHARACTERISTIC CURVES

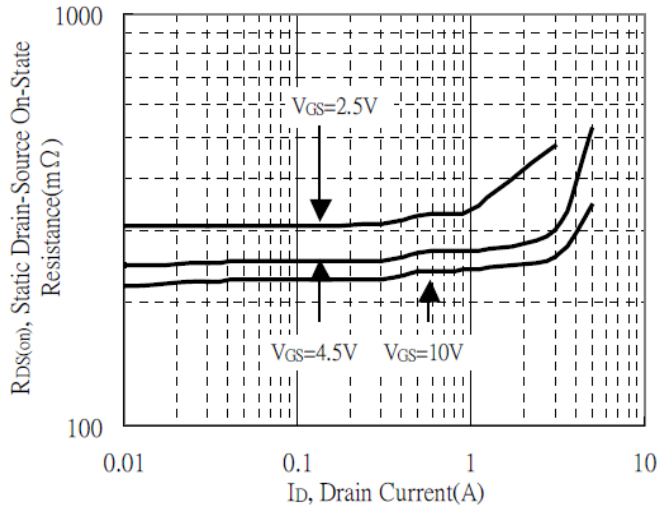
Typical Output Characteristics



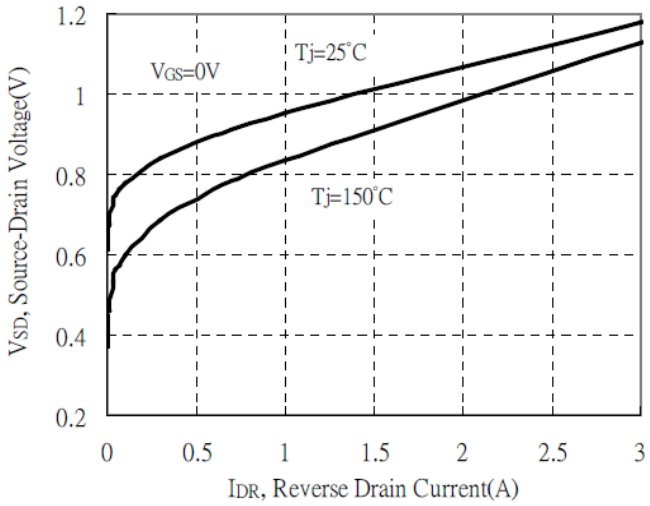
Brekdown Voltage vs Ambient Temperature



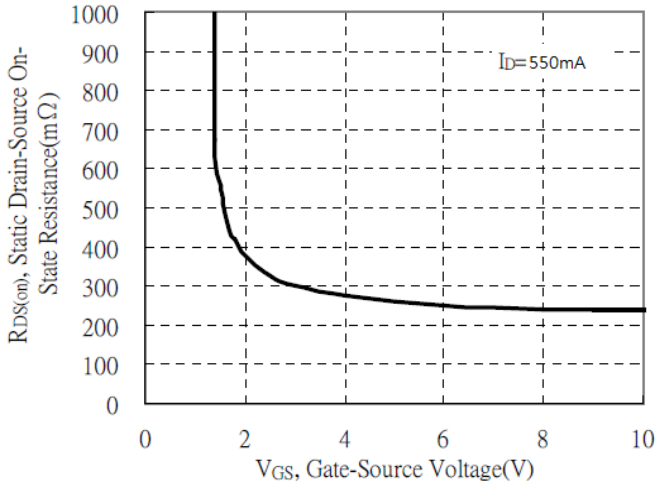
Static Drain-Source On-State resistance vs Drain Current



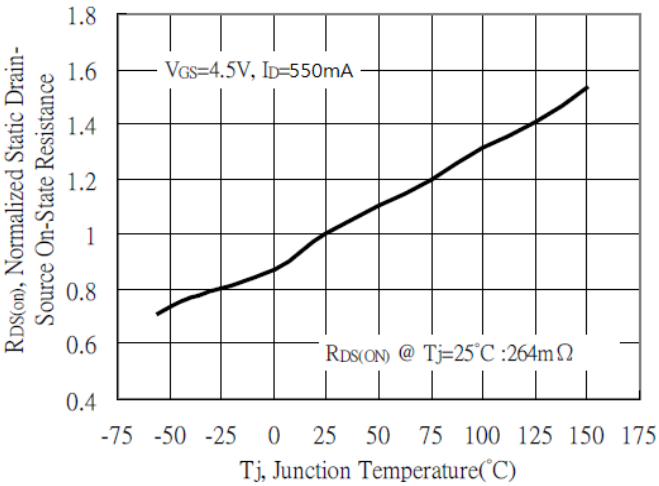
Reverse Drain Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage

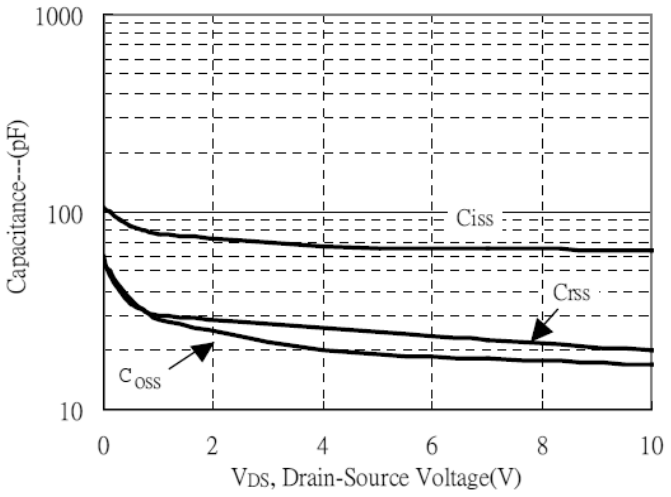


Drain-Source On-State Resistance vs Junction Tempearture

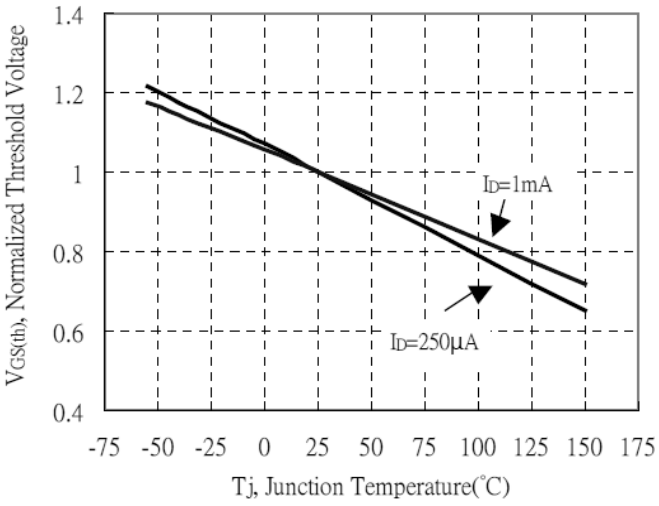


TYPICAL CHARACTERISTIC CURVES

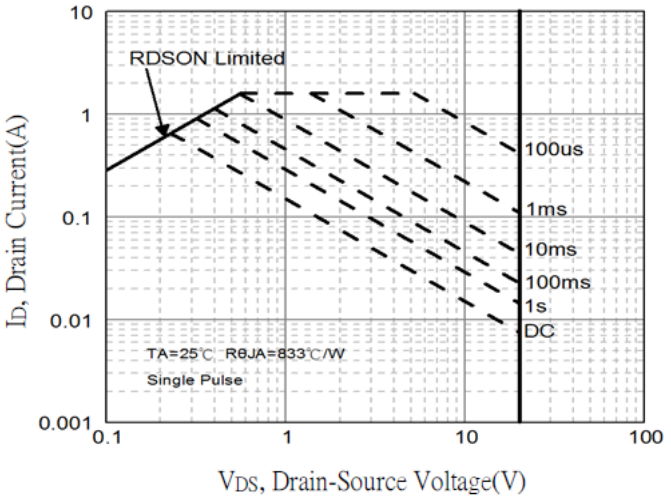
Capacitance vs Drain-to-Source Voltage



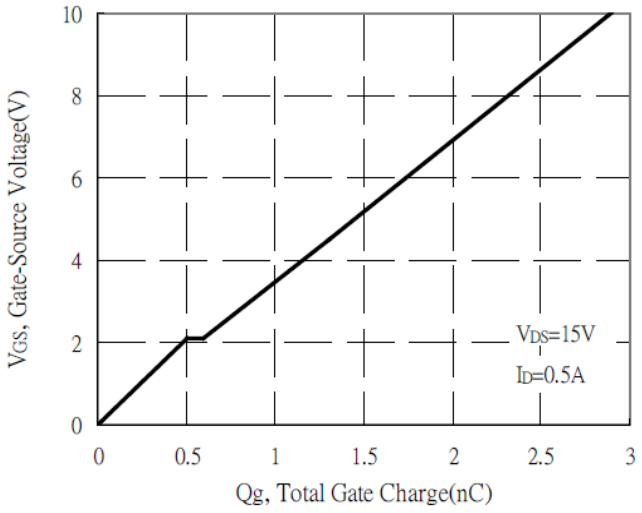
Threshold Voltage vs Junction Tempearture

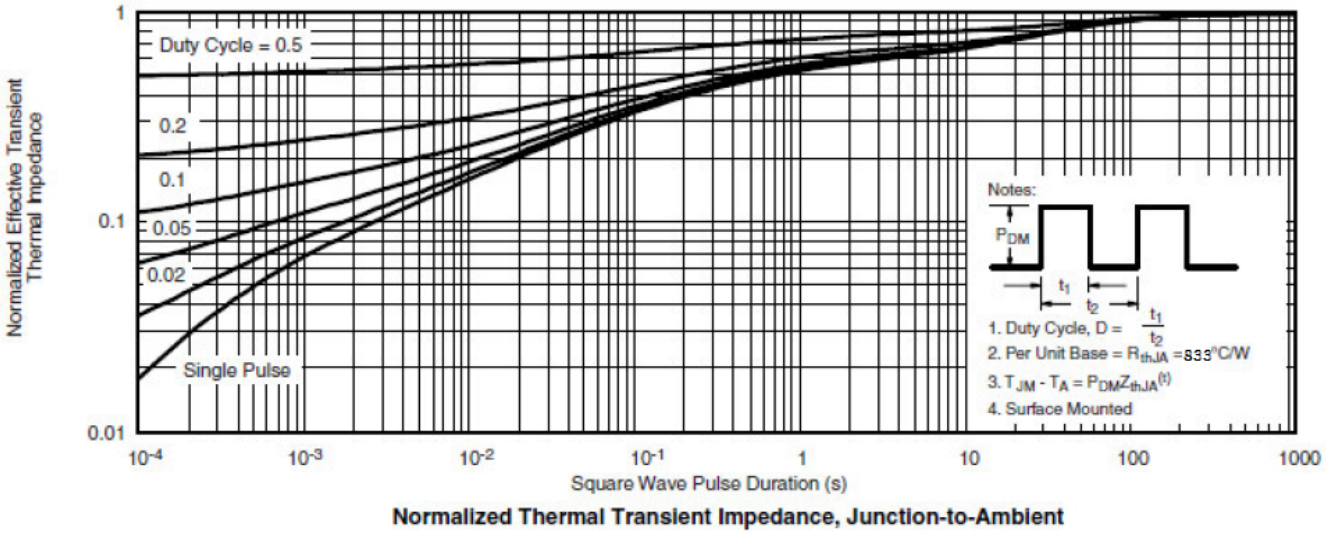


Maximum Safe Operating Area



Gate Charge Characteristics





Normalized Thermal Transient Impedance, Junction-to-Ambient