Elektronische Bauelemente

SGM3055

6A , 30V , $R_{DS(ON)}$ 26 mΩ

N-Channel Enhancement Mode Power MOSFET

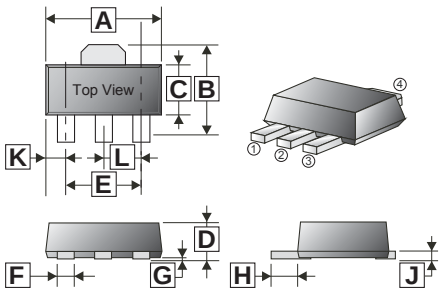
RoHS Compliant Product

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

DESCRIPTION

The GM3055 provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness. The SOT-89 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

SOT-89

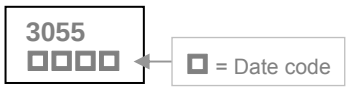


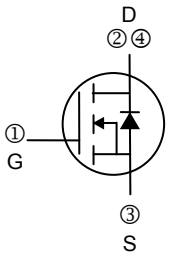
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4.60	G	-	-
B	4.05	4.25	H	0.89	1.20
C	2.40	2.60	J	0.35	0.41
D	1.40	1.60	K	0.70	0.80
E	3.00 REF.		L	1.50 REF.	
F	0.40	0.52			

FEATURES

- Fast Switching
- Dynamic dv/dt Rating
- Repetitive Avalanche Rated
- Simple Drive Requirement

MARKING





PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-89	1K	7 inch

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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current[3]	T_A = 25°C	I_D	6	A
	T_A = 70°C		4.8	A
Pulsed Drain Current[1,2]		I_{DM}	20	A
Power Dissipation		P_D	1.2	W
Linear Derating Factor			0.016	W / °C
Operating Junction & Storage Temperature		T_J, T_{STG}	-55~150	°C
Thermal Resistance Rating				
Thermal Resistance Junction-Ambient[3](Max).		$R_{\theta JA}$	104	°C / W

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

Parameter		Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Drain-Source Breakdown Voltage		BV_{DSS}	30	-	-	V	V_{GS}=0, I_D=250μA
Breakdown Voltage Temperature Coefficient		$\triangle BV_{DSS}/\triangle T_J$	-	0.037	-	V / °C	Reference to 25°C, I_D=1mA
Gate Threshold Voltage		$V_{GS(th)}$	1	-	3	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}= ±20V
Drain-Source Leakage Current	T_J=25°C	I_{DSS}	-	-	25	μA	V_{DS}=30V, V_{GS}=0
	T_J=70°C		-	-	250		V_{DS}=24V, V_{GS}=0
Static Drain-Source On-Resistance		$R_{DS(ON)}$	-	-	26	mΩ	V_{GS}=10V, I_D=4A
			-	-	40		V_{GS}=4.5V, I_D=3A
Total Gate Charge [2]		Q_g	-	5.4	-	nC	I_D=4 A V_{DS}=24V V_{GS}=5V
Gate-Source Charge		Q_{gs}	-	1.3	-		
Gate-Drain (“Miller”) Charge		Q_{gd}	-	3.6	-		
Turn-on Delay Time [2]		$T_{d(on)}$	-	3.6	-	nS	V_{DD}=15V I_D=1A V_{GS}=10V R_G=3.3Ω R_D=1.9Ω
Rise Time		T_r	-	19.8	-		
Turn-off Delay Time		$T_{d(off)}$	-	13	-		
Fall Time		T_f	-	3.2	-		
Input Capacitance		C_{iss}	-	260	-	pF	V_{GS}=0 V_{DS}=30 V f=1.0 MHz
Output Capacitance		C_{oss}	-	144	-		
Reverse Transfer Capacitance		C_{rss}	-	13	-		
Source-Drain Diode							
Forward On Voltage[2]		V_{SD}	-	-	1.3	V	I_S=2A, V_{GS}=0, T_J=25°C
Continuous Source Current(Body Diode)		I_S	-	-	4	A	V_D=V_G=0, V_S=1.3V
Pulsed Source Current(Body Diode) [1]		I_{SM}	-	-	20	A	

Notes:
1. Pulse width limited by safe operating area.
2. Pulse width≦300μs, duty cycle≦2%.

CHARACTERISTIC CURVES

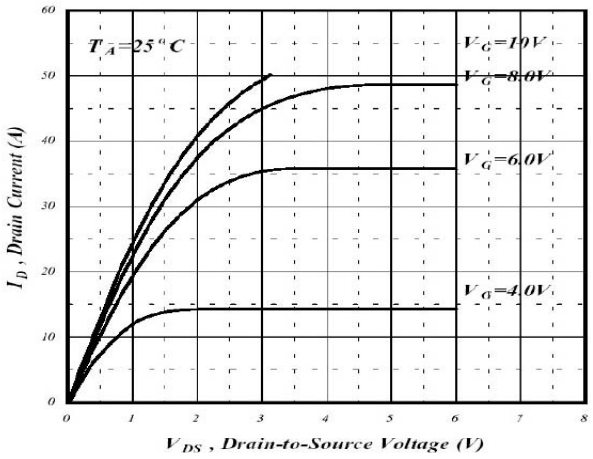


Fig 1. Typical Output Characteristics

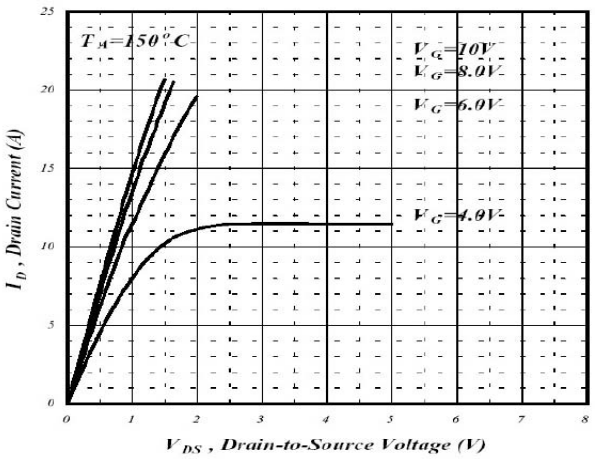


Fig 2. Typical Output Characteristics

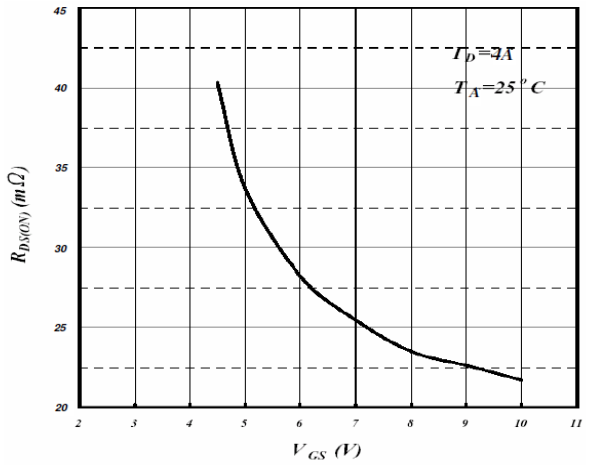


Fig 3. On-Resistance vs. Gate Voltage

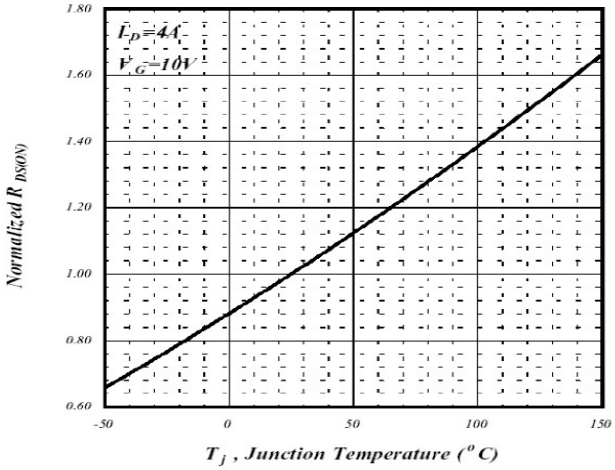


Fig 4. Normalized On-Resistance vs. Junction Temperature

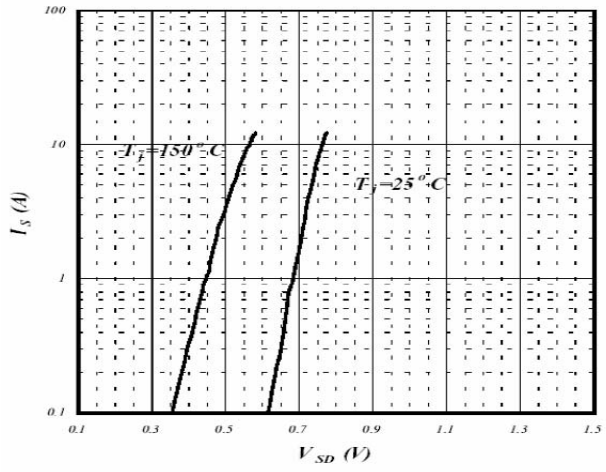


Fig 5. Forward Characteristics of Reverse Diode

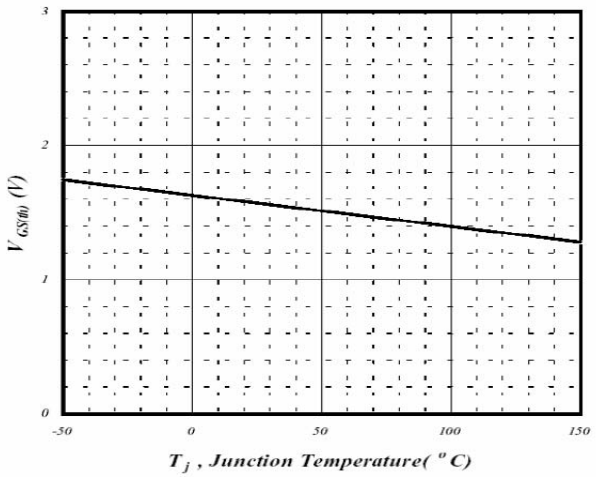


Fig 6. Gate Threshold Voltage vs. Junction Temperature

CHARACTERISTIC CURVES

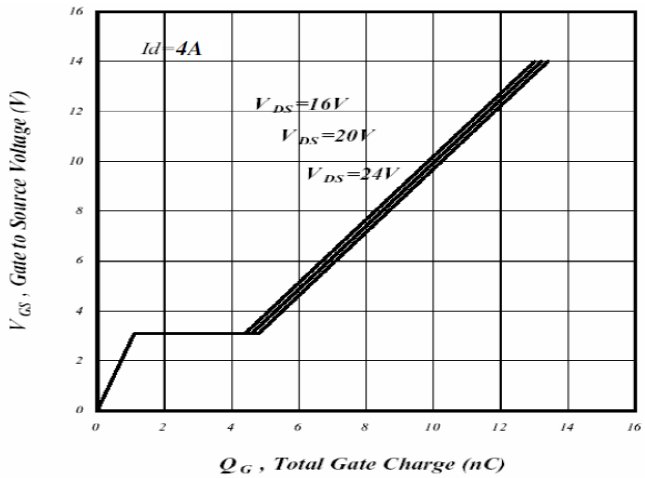


Fig 7. Gate Charge Characteristics

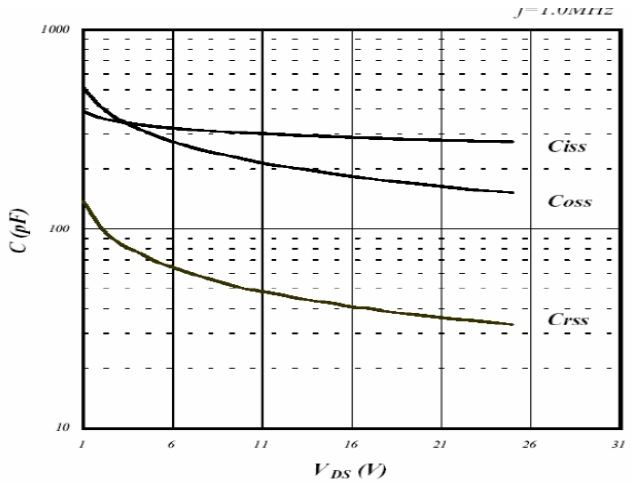


Fig 8. Typical Capacitance Characteristics

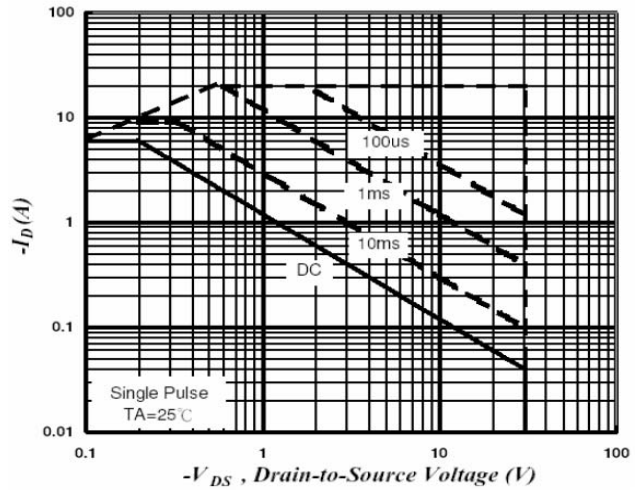


Fig 9. Maximum Safe Operating Area

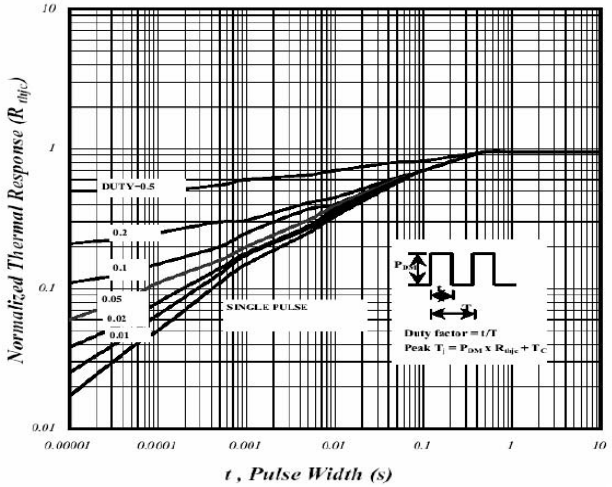


Fig 10. Effective Transient Thermal Impedance

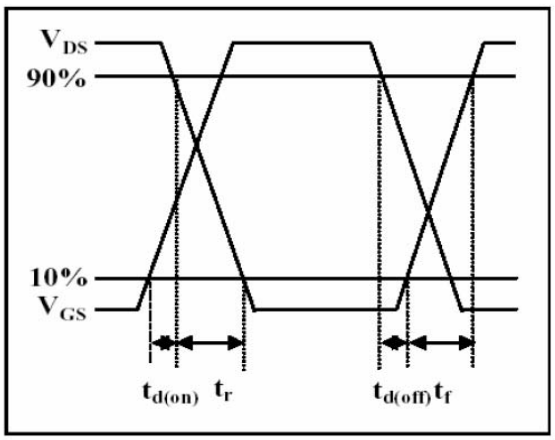


Fig 11. Switching Time Circuit

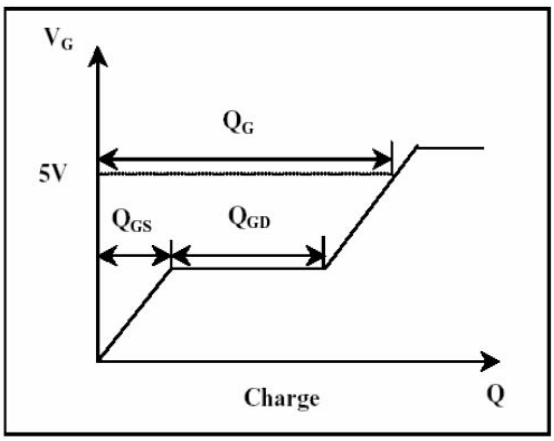


Fig 12. Gate Charge Waveform