

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

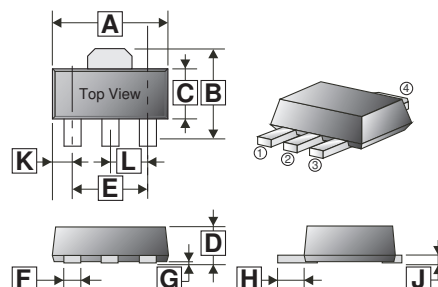
DESCRIPTION

The SGM9452 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.

FEATURES

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

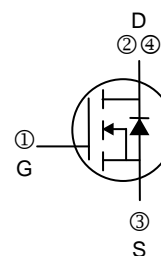
SOT-89



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			

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-89	1K	7 inch



ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	4	A
Power Dissipation	P_D	0.5	W
Thermal Resistance Junction-Ambient.	$R_{\theta JA}$	250	$^{\circ}\text{C} / \text{W}$
Operating Junction & Storage Temperature	T_J, T_{STG}	150, -55~150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_j=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	20	-	-	V	$V_{GS}=0, I_D=250\mu\text{A}$
Gate Threshold Voltage	$V_{GS(th)}$	0.7	-	1.5	V	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$
Gate-Source Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{GS}= \pm 12\text{V}, V_{DS}=0$
Drain-Source Leakage Current	I_{DSS}	-	-	1	μA	$V_{DS}=20\text{V}, V_{GS}=0$
Static Drain-Source On-Resistance ¹	$R_{DS(ON)}$	-	-	38	m Ω	$V_{GS}=10\text{V}, I_D=4\text{A}$
		-	-	50		$V_{GS}=4.5\text{V}, I_D=4\text{A}$
		-	-	80		$V_{GS}=2.5\text{V}, I_D=3\text{A}$
Forward transconductance ¹	g_{FS}	3	-	-	S	$V_{DS}=5\text{V}, I_D=3\text{A}$
Dynamic characteristics ²						
Turn-on Delay Time ^{1,2}	$T_{d(on)}$	-	8	-	nS	$V_{DS}=10\text{V}$ $I_D=1\text{A}$ $V_{GS}=5\text{V}$ $R_{GEN}=3.3\Omega$ $R_D=10\Omega$
Rise Time ²	T_r	-	9	-		
Turn-off Delay Time ²	$T_{d(off)}$	-	13	-		
Fall Time ²	T_f	-	3	-		
Input Capacitance	C_{iss}	-	570	-	pF	$V_{GS}=0$ $V_{DS}=20\text{V}$ $f=1.0\text{ MHz}$
Output Capacitance	C_{oss}	-	80	-		
Reverse Transfer Capacitance	C_{rss}	-	65	-		
Drain-source body diode characteristics						
Forward On Voltage ¹	V_{SD}	-	-	1.3	V	$I_S=1\text{A}, V_{GS}=0$

Notes:

1. Pulse Test ; Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.
2. These parameters have no way to verify

CHARACTERISTIC CURVES

