

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

DESCRIPTION

The SMS3400A provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness. The SOT-23 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

FEATURES

- Lower Gate Charge
- Simple Drive Requirement
- Fast Switching Characteristic

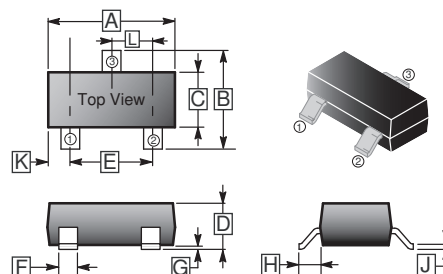
MARKING

R0_A

PACKAGE INFORMATION

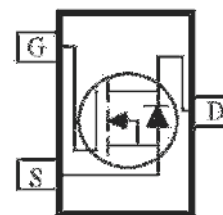
Package	MPQ	Leader Size
SOT-23	3K	7 inch

SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.80	3.04	G	0.09	0.18
B	2.10	2.55	H	0.45	0.60
C	1.20	1.40	J	0.08	0.177
D	0.89	1.15	K	0.6 REF.	
E	1.78	2.04	L	0.89	1.02
F	0.30	0.50			

Top View



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current ($t \leq 10s$)	I_D	5.8	A
Pulsed Drain Current ¹	I_{DM}	30	A
Maximum Power Dissipation ($t \leq 10s$)	P_D	400	mW
Thermal Resistance Junction-Ambient ²	$R_{\theta JA}$	313	$^\circ\text{C} / \text{W}$
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)

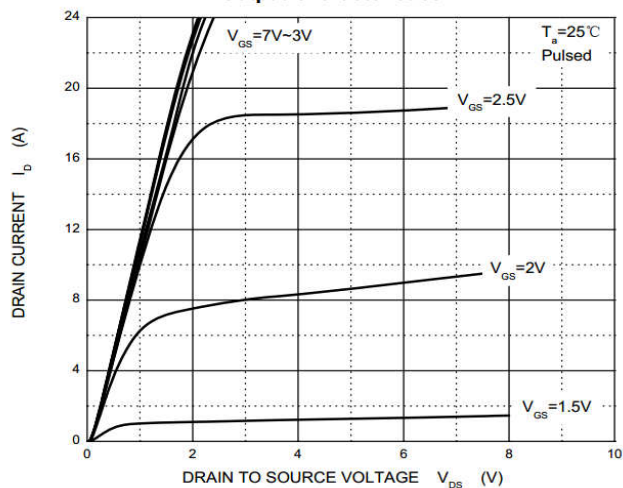
Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	30	-	-	V	V _{GS} =0, I _D =250μA
Gate-Threshold Voltage ³	V _{GS(th)}	0.7	-	1.4	V	V _{DS} =V _{GS} , I _D =250μA
Gate-Source Leakage Current	I _{GSS}	-	-	±100	nA	V _{GS} = ±12V, V _{DS} =0
Drain-Source Leakage Current	I _{DSS}	-	-	1	μA	V _{DS} =24V, V _{GS} =0
Forward Transconductance ³	g _{fs}	8	-	-	S	V _{DS} =5V, I _D =5A
Diode Forward Voltage ³	V _{SD}	-	-	1	V	I _S =1A, V _{GS} =0
Static Drain-Source On-Resistance ³	R _{DS(ON)}	-	-	32	mΩ	V _{DS} =10V, I _D =5.8A
		-	-	38		V _{GS} =4.5V, I _D =5A
		-	-	45		V _{GS} =2.5V, I _D =4A
Switching Parameters ⁴						
Total Gate Charge	Q _g	-	9.5	-	nC	I _D =5.8A V _{DS} =15V V _{GS} =4.5V
Gate-Source Charge	Q _{gs}	-	1.5	-		
Gate-Drain Change	Q _{gd}	-	3	-		
Input Capacitance	C _{iss}	-	1155	-	pF	V _{GS} =0 V _{DS} =15V f =1.0MHz
Output Capacitance	C _{oss}	-	108	-		
Reverse Transfer Capacitance	C _{rss}	-	84	-		
Turn-on Delay Time	T _{d(on)}	-	5	-	nS	V _{DS} =15V V _{GS} =10V R _{GEN} =3Ω R _L =2.7Ω
Rise Time	T _r	-	7	-		
Turn-off Delay Time	T _{d(off)}	-	40	-		
Fall Time	T _f	-	6	-		
Gate Resistance	R _g	-	-	3.6	Ω	V _{GS} = V _{DS} =0, f =1.0MHz

Note:

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t < 5$ sec.
3. Pulse Test : Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

CHARACTERISTIC CURVES

Output Characteristics



Transfer Characteristics

