

isc N-Channel MOSFET Transistor

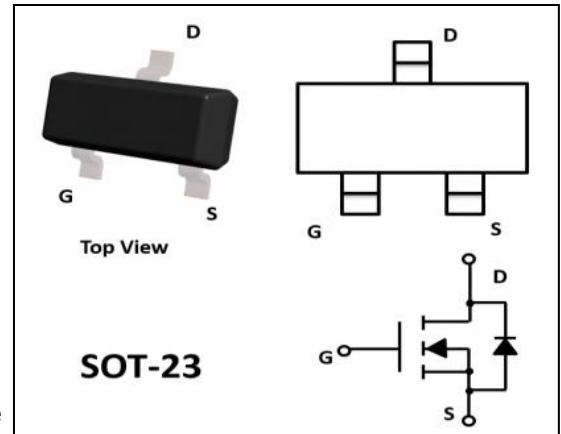
SQ2318AES

• FEATURES

- Low drain-source on-resistance:
 $R_{DS(on)} \leq 45m\Omega$
- Fast Switching Speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• DESCRIPTION

- Provides the designer with an extremely efficient and reliable device for use in battery and load management.

• ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	40	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current-Continuous@ $T_A=25^\circ\text{C}$	5	A
I_{DM}	Drain Current-Single Pulsed	20	A
P_D	Total Dissipation @ $T_A=25^\circ\text{C}$	1.2	W
T_j	Max. Operating Junction Temperature	-55~150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~150	$^\circ\text{C}$

• THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance	104	$^\circ\text{C/W}$

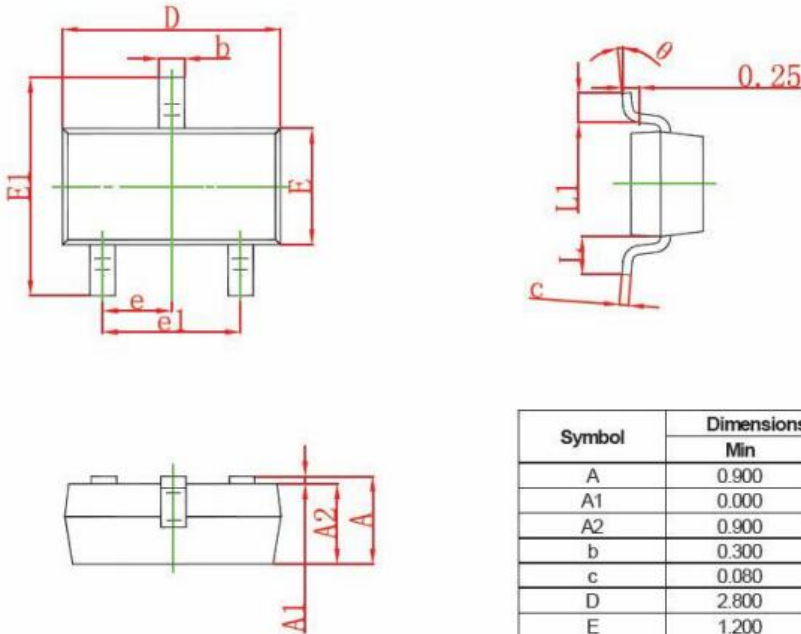
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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT	
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V; I _D =250 μ A	40			V	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} ; I _D =250 μ A	1		2.5	V	
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =10V; I _D =5A			45	mΩ	
		V _{GS} =4.5V; I _D = 3A			60		
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V; V _{GS} =0V			±100	nA	
		V _{GS} = ±10V; V _{GS} =0V			±50		
I _{DSS}	Drain-Source Leakage Current	V _{DS} = 40V; V _{GS} = 0V			1	μ A	
V _{SD}	Diode forward voltage	I _S =5A; V _{GS} = 0V			1.2	V	
C _{iss}	Input Capacitance			490		pF	
C _{oss}	Output Capacitance	V _{DS} =20V; V _{GS} =10V; I _D =3.5A		92		pF	
C _{rss}	Reverse Transfer Capacitance			68		pF	
Q _g	Total Gate Charge			5.2		nC	
Q _{gs}	Gate-Source Charge	V _{DS} =480V; I _D =38A; V _{GS} =10V		0.9		nC	
Q _{gd}	Gate-Drain Charge			1.3		nC	
t _{d(on)}	Turn-on Delay Time				13		nS
t _r	Turn-on Rise Time	V _{GS} =10V; V _{DD} =20V; R _{GEN} = 3 Ω; R _L = 2 Ω		52		nS	
t _{d(off)}	Turn-Off Delay Time				17		nS
t _f	Turn-Off Fall Time				10		nS

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SOT-23 Package information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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