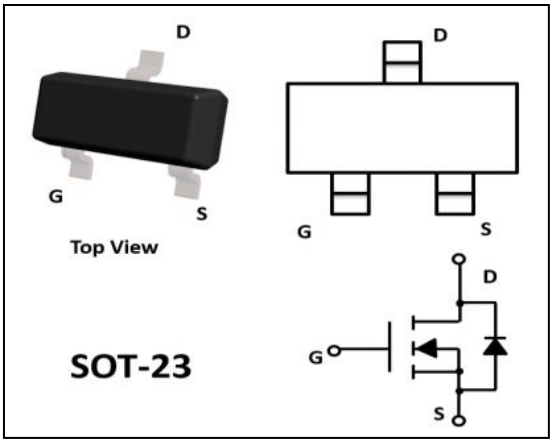
isc N-Channel MOSFET Transistor SQ2318AES



• FEATURES

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

• DESCRITION

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

• ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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℃	5	A
I_{DM}	Drain Current-Single Pulsed	20	A
P_D	Total Dissipation @T_A=25℃	1.2	W
T_j	Max. Operating Junction Temperature	-55~150	℃
T_{stg}	Storage Temperature	-55~150	℃

• THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
Rth(ch-a)	Channel-to-ambient thermal resistance	104	℃/W

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V; I_D =250 μA	40			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}; I_D =250 μA	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	μA
V_{SD}	Diode forward voltage	I_S=5A; V_{GS} = 0V			1.2	V
C_{iss}	Input Capacitance	V_{DS}=20V;V_{GS}=10V; I_D=3.5A		490		pF
C_{oss}	Output Capacitance			92		pF
C_{rss}	Reverse Transfer Capacitance			68		pF
Q_g	Total Gate Charge	V_{DS}=480V; I_D=38A; V_{GS}=10V		5.2		nC
Q_{gs}	Gate-Source Charge			0.9		nC
Q_{gd}	Gate-Drain Charge			1.3		nC
$t_{d(on)}$	Turn-on Delay Time	V_{GS}=10V; V_{DD}=20V; R_{GEN}= 3Ω; R_L= 2Ω		13		nS
t_r	Turn-on Rise Time			52		nS
$t_{d(off)}$	Turn-Off Delay Time			17		nS
t_f	Turn-Off Fall Time			10		nS

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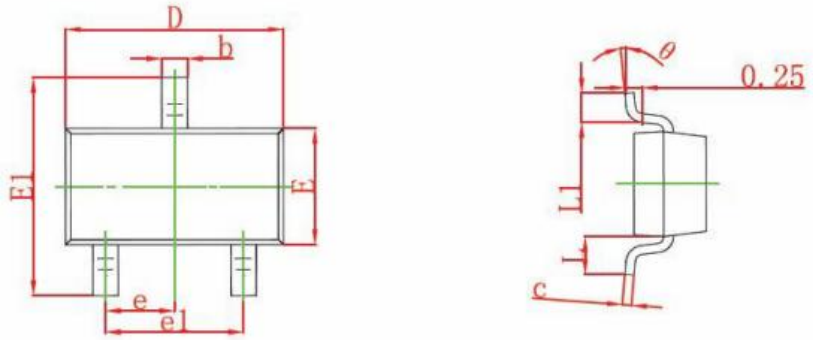
SOT-23 Package information



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°