

Silicon N-Channel Power MOSFET

Description

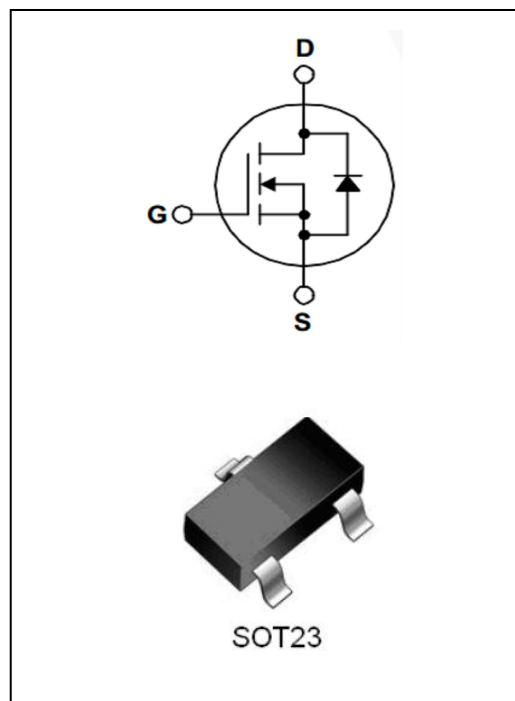
The TH3400TB uses advanced technology and design to provide excellent $R_{DS(ON)}$. It can be used in a wide variety of applications.

General Features

- $V_{DS}=30V, I_D=5.8A$
- Low ON Resistance
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

Application

- Power switching application
- Adapter and charger



Electrical Characteristics @ $T_a=25^{\circ}C$ (unless otherwise specified)

a) Absolute Maximum Ratings:

Symbol	Parameter	Value	Units
V_{DS}	Drain-to-Source Breakdown Voltage	30	V
I_D	Drain Current (continuous) at $T_c=25^{\circ}C$	5.8	A
I_{DM}	Drain Current (pulsed)	20	A
V_{GS}	Gate to Source Voltage	+/-12	V
P_{tot}	Total Dissipation at $T_c=25^{\circ}C$	1.3	W
T_j	Max. Operating Junction Temperature	150	$^{\circ}C$

b) Electrical Parameters:

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_{DS}	Drain-source Voltage	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
$R_{DS(on)}$	Static Drain-to-Source on-Resistance	$V_{GS}=10V, I_D=5.8A$	-	26	30	m Ω
$V_{GS(th)}$	Gated Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	2.0	3.0	V
I_{DSS}	Drain to Source leakage Current, $T_c=25^\circ C$	$V_{DS}=30V, V_{GS}=0V$	-	-	1.0	μA
	Drain to Source leakage Current, $T_c=125^\circ C$	$V_{DS}=30V, V_{GS}=0V$	-	-	100	μA
$I_{GSS(F)}$	Gated to Source Foward Leakage	$V_{GS}=+12V$	-	-	100	nA
$I_{GSS(R)}$	Gated to Source Reverse Leakage	$V_{GS}=-12V$	-	-	-100	nA
C_{iss}	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=15V,$ $f=1.0MHZ$	-	430	-	pF
C_{oss}	Output Capacitance		-	105	-	pF
C_{rss}	Reverse Transfer Capacitance		-	30	-	pF

c) Switching Characteristics

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=15V, I_D=5.8A,$ $V_{GS}=4.5V, R_G=3.3\Omega$	-	7.5	-	nS
t_r	Turn-on Rise Time		-	16	-	nS
$t_{d(off)}$	Turn-off Delay Time		-	38	-	nS
t_f	Turn-off Fall Time		-	3.5	-	nS
Q_g	Total Gate Charge	$V_{DS}=15V$ $I_D=5.8A$ $V_{GS}=4.5V$	-	11.5	-	nC
Q_{gs}	Gate-Source Charge		-	1.8	-	nC
Q_{gd}	Gate-Drain Charge		-	2.9	-	nC

d) Source-Drain Diode Characteristics

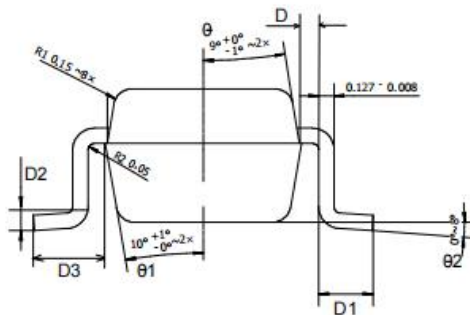
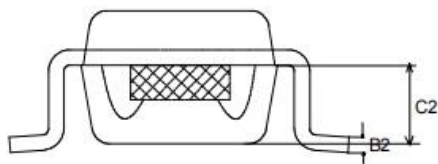
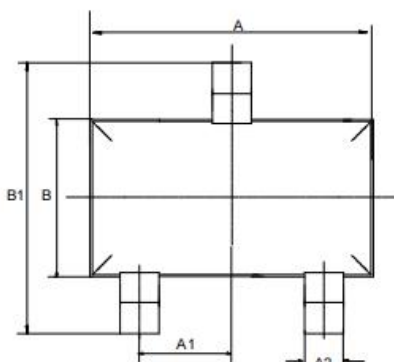
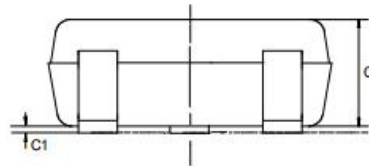
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
I _{SD}	S-D Current(Body Diode)		-	-	5.8	A
I _{SDM}	Pulsed S-D Current(Body Diode)		-	-	17.5	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _{DS} =5.8A	-	-	1.5	v
t _{rr}	Reverse Recovery Time	T _J =25℃, I _F =5.8A di/dt=100A/us	-	9	-	nS
Q _{rr}	Reverse Recovery Charge		-	2.8	-	μC
	*Pulse Test: Pulse Width <= 300μs, Duty Cycle< =2%					

Symbol	Parameter	Typ	Units
$R_{\theta JC}$	Junction-to-Case	130	$^\circ C/W$

Package Information

SOT-23-3L PACKAGE

SOT23-3L



COMMON DIMENSIONS UNITS: MEASURE=MILLIMETER			
SYMBOL	MIN	NOM	MAX
A	2.82	2.92	3.02
A1	0.90	0.95	1.0
A2	0.35	0.4	0.45
B	1.52	1.62	1.72
B1	2.80	2.90	3.0
B2	0.12	0.128	0.135
C	1.05	1.10	1.15
C1	0.03	0.08	0.13
C2	0.6	0.65	0.7
D	0.03	0.08	0.13
D1	0.4	0.45	0.5
D2	0.25 TYP		
D3	0.6	0.65	0.7

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