

Description
N-channel Enhancement MOSFET
Features

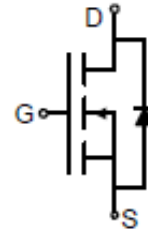
- $V_{DS}=60V$, $I_D=3A$
- $R_{DS(ON)} < 100m\Omega$ @ $V_{GS} = 10V$
 $R_{DS(ON)} < 115m\Omega$ @ $V_{GS} = 4.5V$
- High Power and Current Handling Capability
- Lead Free Product is Acquired
- Surface Mount Package

Application

- Battery Protection
- Load Switch
- Power Management

Package


SOT-23


Absolute Maximum Ratings ($T_C=25^\circ C$ unless otherwise specified)

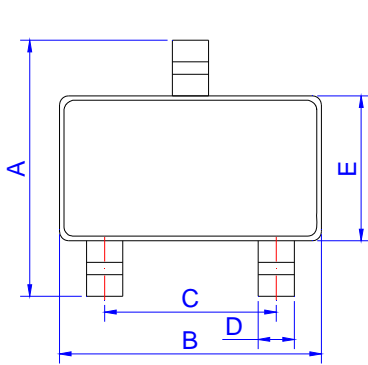
Symbol	Parameter	Max.	Units
V_{DSS}	Drain-Source Voltage	60	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	$T_C = 25^\circ C$	3
		$T_C = 100^\circ C$	2
I_{DM}	Pulsed Drain Current ^{note1}	10	A
P_D	Power Dissipation	$T_A = 25^\circ C$	0.35
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^\circ C/W$
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to +150	$^\circ C$

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

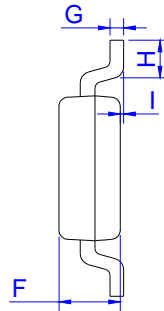
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	60	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V,$	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	-	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance <small>note2</small>	$V_{GS}=10V, I_D=2A$	-	-	100	m Ω
		$V_{GS}=4.5V, I_D=1A$	-	-	115	
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=30V, V_{GS}=0V,$ $f=1.0MHz$	-	250	-	pF
C_{oss}	Output Capacitance		-	26	-	pF
C_{rss}	Reverse Transfer Capacitance		-	20	-	pF
Q_g	Total Gate Charge	$V_{DS}=30V, I_D=3A,$ $V_{GS}=4.5V$	-	7	-	nC
Q_{gs}	Gate-Source Charge		-	1.2	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	1.5	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=30V, I_D=1.5A,$ $R_{GEN}=1\Omega, V_{GS}=10V,$	-	6.5	-	ns
t_r	Turn-on Rise Time		-	15.2	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	15.2	-	ns
t_f	Turn-off Fall Time		-	10.3	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	3	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	10	A
V_{SD}	Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=1A$	-	-	1.2	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

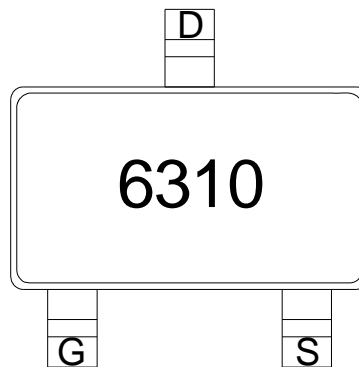
2. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$

Package Mechanical Data


SOT-23



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.30	2.40	2.50	0.091	0.095	0.098
B	2.80	2.90	3.00	0.110	0.114	0.118
C	1.90 REF			0.075 REF		
D	0.35	0.40	0.45	0.014	0.016	0.018
E	1.20	1.30	1.40	0.047	0.051	0.055
F	0.90	1.00	1.10	0.035	0.039	0.043
G		0.10	0.15		0.004	0.006
H	0.20			0.008		
I	0		0.10	0		0.004

Marking


S10: Device Code

Ordering Information-SOT-23

OUTLINE	PACKAGE TYPE	QUANTITY REEL	DESCRIPTION
TAPING	SOT-23	3,000pcs	7 inch reel pack