

Description:

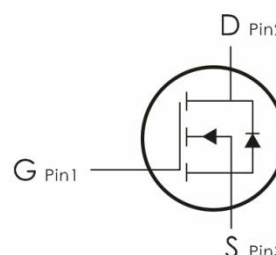
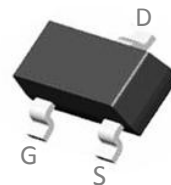
This N-Channel MOSFET uses advanced trench technology and

design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.

Features:

- 1) $V_{DS}=60V, I_D=2.2A, R_{DS(on)} < 180m\Omega @ V_{GS}=10V$ (Typ : $140m\Omega$)
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra $R_{DS(on)}$.
- 5) Excellent package for good heat dissipation.



Absolute Maximum Ratings: ($T_a=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_A=25^\circ C^1$	2.2	A
	Continuous Drain Current- $T_A=70^\circ C^1$	1.7	
I_{DM}	Pulse Drain Current Tested ²	15	A
P_D	Power Dissipation- $T_A=25^\circ C^1$	1.3	W
	Power Dissipation- $T_A=70^\circ C^1$	0.8	
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	$^\circ C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient ¹	100	$^\circ C/W$

Package Marking and Ordering Information:

Part NO.	Marking	Package
DO2308S	2308S	SOT-23

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	60	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =60V	---	---	1	μ A
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 20V, V _{DS} =0A	---	---	± 100	nA
On Characteristics						
V _{GS(th)}	GATE-Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μ A	1	---	2.5	V
R _{DS(on)}	Drain-Source on-Resistance ¹	V _{GS} =10V, I _D =2.2A	---	140	180	m Ω
		V _{GS} =4.5V, I _D =1.8A	---	160	220	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DD} =30V, V _{GS} =10V, I _D =1A, R _G =30 Ω	---	9	---	ns
t _r	Rise Time		---	9	---	ns
t _{d(off)}	Turn-Off Delay Time		---	19	---	ns
t _f	Fall Time		---	9	---	ns
Q _g	Total Gate Charge	V _{GS} =10V, V _{DS} =30V, I _D =2.2A	---	3	---	nC
Q _{gs}	Gate-Source Charge		---	3	---	nC
Q _{gd}	Gate-Drain “Miller” Charge		---	1	---	nC
Drain-Source Diode Characteristics						
I _S	Source drain current	VD=VG=0V	---	---	2.2	A
I _{SM}	Pulse Drain Current Tested	VD=VG=0V	---	---	15	A
V _{SD}	Forward Voltage	V _{GS} =0V , I _{SD} =1.7A	---	---	1.2	V

Notes:

1. Pulse test : $PW \leq 300\mu s$ duty cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production testing.