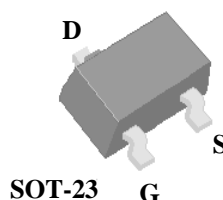


- ▼ Capable of 2.5V gate drive
- ▼ Lower Gate Charge
- ▼ Surface mount package
- ▼ RoHS Compliant & Halogen-Free

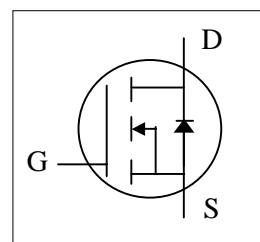


$BV_{DSS}$	20V
$R_{DS(ON)}$	25m $\Omega$
$I_D$	6A

## Description

Advanced Power MOSFETs utilized advanced processing techniques to achieve the lowest possible on-resistance, extremely efficient and cost-effectiveness device.

The SOT-23 package is widely used for all commercial-industrial applications.



## Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	20	V
$V_{GS}$	Gate-Source Voltage	$\pm 12$	V
$I_D @ T_A = 25^\circ\text{C}$	Continuous Drain Current <sup>3</sup> , $V_{GS} @ 4.5\text{V}$	6	A
$I_D @ T_A = 70^\circ\text{C}$	Continuous Drain Current <sup>3</sup> , $V_{GS} @ 4.5\text{V}$	4.8	A
$I_{DM}$	Pulsed Drain Current <sup>1</sup>	24	A
$P_D @ T_A = 25^\circ\text{C}$	Total Power Dissipation	1.38	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

## Thermal Data

Symbol	Parameter	Value	Unit
Rthj-a	Maximum Thermal Resistance, Junction-ambient <sup>3</sup>	90	$^\circ\text{C}/\text{W}$

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	20	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance <sup>2</sup>	$V_{GS}=4.5V, I_D=5A$	-	-	25	$m\Omega$
		$V_{GS}=2.5V, I_D=2.5A$	-	-	39	$m\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	0.3	-	1.2	V
$g_{fs}$	Forward Transconductance	$V_{DS}=5V, I_D=5A$	-	15	-	S
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=20V, V_{GS}=0V$	-	-	1	$\mu A$
$I_{GSS}$	Gate-Source Leakage	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	$\pm 100$	nA
$Q_g$	Total Gate Charge <sup>2</sup>	$I_D=5A$	-	9	14.4	nC
$Q_{gs}$	Gate-Source Charge	$V_{DS}=10V$	-	1.2	-	nC
$Q_{gd}$	Gate-Drain ("Miller") Charge	$V_{GS}=4.5V$	-	3.5	-	nC
$t_{d(on)}$	Turn-on Delay Time <sup>2</sup>	$V_{DS}=10V$	-	8	-	ns
$t_r$	Rise Time	$I_D=1A$	-	11	-	ns
$t_{d(off)}$	Turn-off Delay Time	$R_G=3.3\Omega$	-	20	-	ns
$t_f$	Fall Time	$V_{GS}=10V$	-	6	-	ns
$C_{iss}$	Input Capacitance	$V_{GS}=0V$	-	600	960	pF
$C_{oss}$	Output Capacitance	$V_{DS}=20V$	-	125	-	pF
$C_{rss}$	Reverse Transfer Capacitance	$f=1.0\text{MHz}$	-	115	-	pF
$R_g$	Gate Resistance	$f=1.0\text{MHz}$	-	1.7	-	$\Omega$

**Source-Drain Diode**

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$V_{SD}$	Forward On Voltage <sup>2</sup>	$I_S=1.2A, V_{GS}=0V$	-	-	1.2	V
$t_{rr}$	Reverse Recovery Time <sup>2</sup>	$I_S=5A, V_{GS}=0V,$	-	22	-	ns
$Q_{rr}$	Reverse Recovery Charge	$dI/dt=100A/\mu s$	-	10	-	nC

**Notes:**

1. Pulse width limited by Max. junction temperature.
2. Pulse test
3. Surface mounted on 1 in<sup>2</sup> copper pad of FR4 board ; 270°C/W when mounted on min. copper pad.