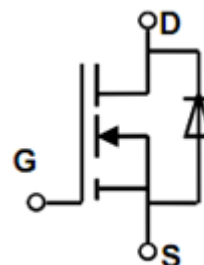
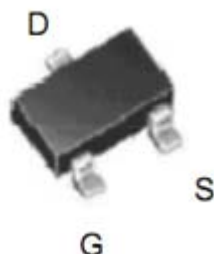


FEATURES

- ◆ Super high dense cell design for low $R_{DS(ON)}$
- ◆ Rugged and reliable.
- ◆ Simple drive requirement.
- ◆ SOT-23 package.

PRODUCT SUMMARY		
V_{DSS}	I_D	$R_{DS(ON)}$ (mΩ)Typ
20V	2.5A	40@ $V_{GS}=4.5V$
		50@ $V_{GS}=2.5V$



ABSOLUTEMAXIMUM RATINGS ($T_A=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	V
Drain Current-Continuous ^a @ $T_J=125^{\circ}C$ -Pulse d ^b	I_D	2.5	A
	I_{DM}	8	A
Drain-Source Diode Forward Current ^a	I_S	1.25	A
Maximum Power Dissipation ^a	P_D	$T_A=25^{\circ}C$	1.25
		$T_A=75^{\circ}C$	0.8
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}C$

THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Ambient ^a	$R_{th J_A}$	100	$^{\circ}C/W$
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ELECTRICAL CHARACTERISTICS (TA = 25 °C unless otherwise noted) HT2302

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=16V, V_{GS}=0V$			1	μA
Gate-Body Leakage	I_{GSS}	$V_{GS}=\pm 8V, V_{DS}=0V$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	0.6	0.8	1.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=2.5A$		40	60	m Ω
		$V_{GS}=2.5V, I_D=2.0A$		50	115	
Forward Transconductance	g_{FS}	$V_{DS}=5V, I_D=4.5A$		5		S
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	$V_{DS}=10V, V_{GS}=0V$ $f=1.0MHz$		456		pF
Output Capacitance	C_{OSS}			86		pF
Reverse Transfer Capacitance	C_{RSS}			59		pF
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=10V$ $I_D=1A,$ $V_{GEN}=4.5V$ $R_L=10ohm$ $R_{GEN}=10ohm$		11.2		ns
Rise Time	t_f			3.5		ns
Turn-Off Delay Time	$t_{D(OFF)}$			20		ns
Fall Time	t_f			4.5		ns
Total Gate Charge	Q_g	$V_{DS}=10V, I_D=1A,$ $V_{GS}=4.5V$		5		nC
Gate-Source Charge	Q_{gs}			0.9		nC
Gate-Drain Charge	Q_{gd}			1.2		nC
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=1.25A$		0.84	1.2	V

Notes

- Surface Mounted on FR4 Board, $t \leq 10sec$
- Pulse Test: PulseWidth $\leq 300\mu s$, Duty Cycle $\leq 2\%$
- Guaranteed by design, not subject to production testing.