

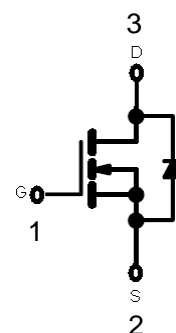
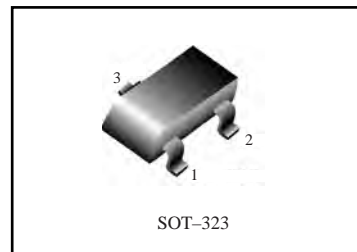
20V N-Channel Enhancement-Mode MOSFET

FEATURE

Leading Trench Technology for Low $R_{DS(on)}$ Extending Battery Life

APPLICATIONS

- High Side Load Switch
- Charging Circuit
- Single Cell Battery Applications such as Cell Phones, Digital Cameras ,PDAs, etc



MARKING: TS2

Maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain- Source Voltage	V_{DS}	20	V
Gate- Source Voltage	V_{GS}	± 8	
Continuous Drain Current	I_D	2.1	A
Continuous Source- Drain Current(Diode Conduction)	I_S	0.6	
Power Dissipation	P_D	0.2	W
Thermal Resistance from Junction to Ambient ($t \leq 5s$)	$R_{\theta JA}$	625	$^{\circ}\text{C}/\text{W}$
Operating Junction	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	- 55 ~ +150	

Electrical characteristics (T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain - source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _b = 10μA	20			V
Gate - threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 50μA	0.65	0.95	1.2	
Gate - body leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V			1	μA
Drain - source on - resistance ¹	R _{DS(on)}	V _{GS} = 4.5V, I _D = 3.6A		0.045	0.060	Ω
		V _{GS} = 2.5V, I _D = 3.1A		0.070	0.115	
Forward transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 3.6A		8		S
Diode forward voltage	V _{SD}	I _S = 0.94A, V _{GS} = 0V		0.76	1.2	V
Dynamic Characteristics						
Total gate charge	Q _g	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 3.6A		4.0	10	nC
Gate - source charge	Q _{gs}			0.65		
Gate - drain charge	Q _{gd}			1.5		
Input capacitance ²	C _{iss}	V _{DS} = 10V, V _{GS} = 0V, f = 1MHz		300		pF
Output capacitance ²	C _{oss}			120		
Reverse transfer capacitance ²	C _{rss}			80		
Switching Characteristics ²						
Turn - on delay time	t _{d(on)}	V _{DD} = 10V, R _L = 5.5Ω, I _D = 3.6A, V _{GEN} = 4.5V, R _g = 6Ω		7	15	ns
Rise time	t _r			55	80	
Turn - off delay time	t _{d(off)}			16	60	
Fall time	t _f			10	25	

Notes :

1. Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
2. These parameters have no way to verify.