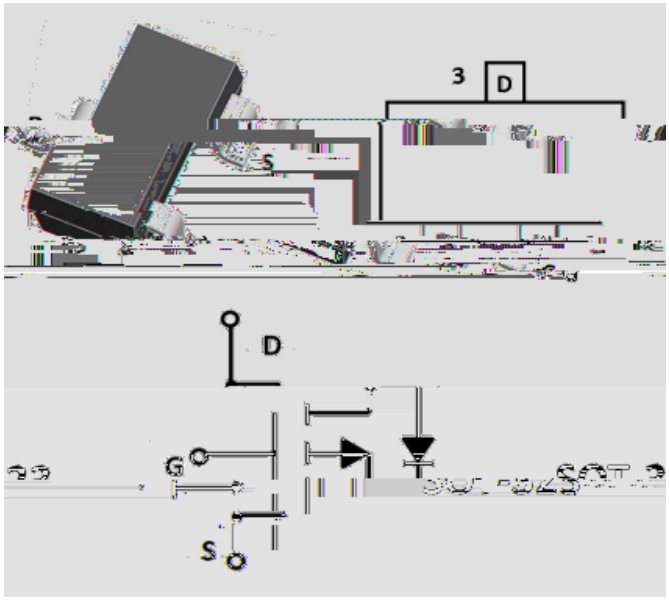
P-Channel Enhancement Mode Field Effect Transistor



Product Summary

- I_D -1．2A
- $R_{DS(ON)}$(at V_{GS} = - 4 ． 5 V) 130 mohm
- $R_{DS(ON)}$(at V_{GS}=-2.5V) 170 mohm
- $R_{DS(ON)}$(at V_{GS}=-1.8V) 250 mohm

General Description

- Trench Power LV MOSFET technology
- Low $R_{DS(ON)}$
- Low Gate Charge
- Part no. with suffix ”Q” means AEC-Q101 qualified

Applications

- Video monitor
- Power management

■ Absolute Maximum Ratings (T_A=25 unless otherwise noted)

Parameter		Symbol	Maximum	Unit
Drain-source Voltage		V_{DS}	-20	V
Gate-source Voltage		V_{GS}	±10	V
Drain Current	T_A=25 @ Steady State	I_D	-1.2	A
	T_A=70 @ Steady State300	mW	-1.0	
Pulsed Drain Current [A]		I_{DM}	-9.6	A
=1 A				
Thermal Resistance Junction-to-Ambient [B]		$R_{\theta JA}$	400	/ W
Junction and Storage Temperature Range		T_J ,T_{STG}	-55 +150	

■ Ordering Information

PREFERED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL2101WQ	F2	TS1.	3000	30000	120000	7“ reel

■ Electrical Characteristics (T_J=25 unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=-250μA	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V,V_{GS}=0V,T_A=25			-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±10V, V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=-250μA	-0.3	-0.6	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}= -4.5V, I_D=-1.5A		100	130	mΩ
		V_{GS}= -2.5V, I_D=-1.2A		135	170	
		V_{GS}= -1.8V, I_D=-1.0A		180	250	
Diode Forward Voltage	V_{SD}	I_S=-2.0A,V_{GS}=0V		-0.9	-1.2	V
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=-10V,V_{GS}=0V,f=1MHZ		210		pF
Output Capacitance	C_{oss}			37		
Reverse Transfer Capacitance	C_{rss}			30		
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=-4.5V,V_{DS}=-10V,I_D=-1.2A		2.9		nC
Gate Source Charge	Q_{gs}			0.65		
Gate Drain Charge	Q_{gd}			0.7		
Reverse Recovery Charge	Q_{rr}	I_{SD}=-1.2A,di/dt=60A/us		0.9		nC
Reverse Recovery Time	t_{rr}			5.4		ns
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=-4.5V, V_{DS}=-10V, I_D=-1.2A, R_g=3Ω		4.8		ns
Turn-on Rise Time	t_r			22		
Turn-off Delay Time	$t_{D(off)}$			21		
Turn-off Fall Time	t_f			28		

A. Repetitive rating; pulse width limited by max. junction temperature.
B. Device mounted on FR-4 PCB, 1 mm x 17mm x 15mm.

v 7\SLFDO 3HUIRUPDQFH &KDUDFWHULVWLFV

)LJXUH 2XWSXW &KDUDFWHULVWLFV)LJXUH 7UDQVIHU &KDU

)LJXUH &DSDFLWDQFH &KDUDFWHULVWLFV)LJXUH *DWH &KDU

)LJXUH 2Q 5HVLVWDQFH &KDUDFWHULVWLFV)LJXUH 1 7•00

Figure 7. $R_{DS(on)}$ VS Drain Current

Figure 8. Forward characteristics of reverse diode

Figure 9. Normalized breakdown voltage

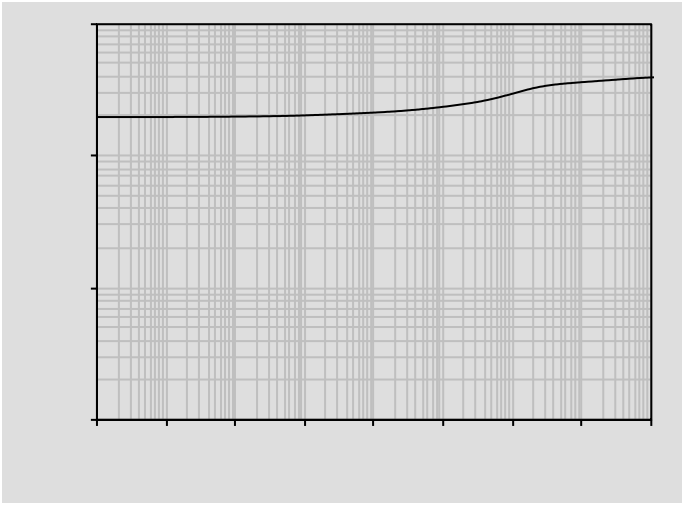


Figure 10. Normalized Threshold voltage

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