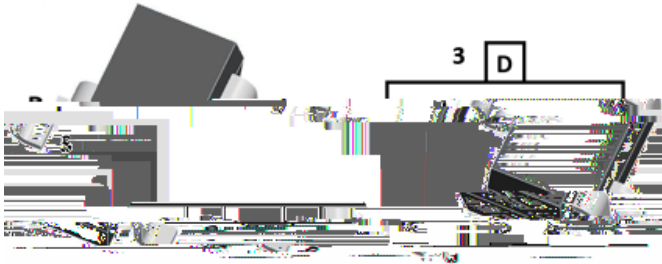




## P-Channel Enhancement Mode Field Effect Transistor



## Product Summary

r 3

$I_D$	-1 " 2A
$R_{DS(ON)}$ ( at $V_{GS} = 1 - ( " ) V$ )	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	$V_{GS}$	$\pm 10$	V
Drain Current T7	$I_D$	$T_A = 25$ @ Steady State	-1.2
		$T_A = 70$ @ Steady State 300	-1.0
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	-9.6	A
$\leq 1$ A			
Thermal Resistance Junction-to-Ambient <sup>B</sup>	$R_{JA}$	400	/W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 +150	

## Ordering Information

PREFERRED 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



# YJL2101WQ

## Electrical Characteristics ( $T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-20V, V_{GS}=0V, T_A=25$			-1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 10V, V_{DS}=0V$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-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	m
		$V_{GS}=-2.5V, I_D=-1.2A$		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
<b>Dynamic Parameters</b>						
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		
<b>Switching Parameters</b>						
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	$t_{D(on)}$	$V_{GS}=-4.5V, V_{DS}=-10V, I_D=-1.2A, R_g=3$		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 5HVLVWVDFRFXVFDWRHOWDJH

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

