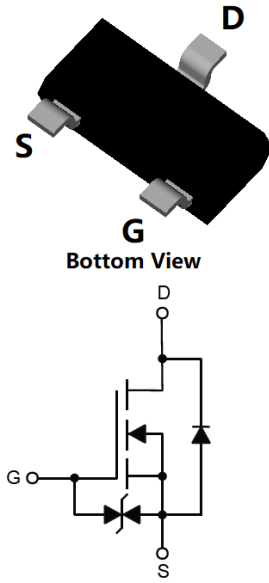
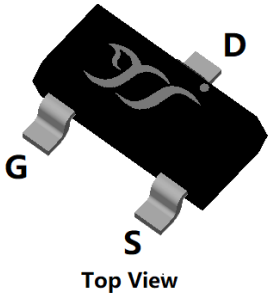


N-Channel Enhancement Mode Field Effect Transistor



SOT-23

Product Summary

- V_{DS} 20 V
- I_D 0.5 A
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) < 300 mohm
- $R_{DS(ON)}$ (at $V_{GS}=2.5V$) < 400 mohm
- $R_{DS(ON)}$ (at $V_{GS}=1.8V$) < 700 mohm
- ESD Protected Up to 2.0KV (HBM)

General Description

- Trench Power LV MOSFET technology
- High Power and current handling capability

Applications

- PWM application
- Load switch

■ Absolute Maximum 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}	± 12	V
Drain Current	I_D	$T_A=25^\circ C$ @ Steady State	0.5
		$T_A=70^\circ C$ @ Steady State	0.4
Pulsed Drain Current ^A	I_{DM}	3.3	A
Total Power Dissipation @ $T_A=25^\circ C$	P_D	0.35	W
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	357	$^\circ C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ C$

■ Ordering Information

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL3134KA	F2	34KA.	3000	30000	120000	7" reel



YJL3134KA

■ Electrical Characteristics (T_J=25°C 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			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±10V, V _{DS} =0V		2.5	±10	μA
		V _{GS} = ±8V, V _{DS} =0V		500	±2000	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.35	0.75	1.1	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =0.5A		220	300	mΩ
		V _{GS} =2.5V, I _D =0.45A		290	400	
		V _{GS} =1.8V, I _D =0.4A		420	700	
Diode Forward Voltage ^C	V _{SD}	I _S =0.5A, V _{GS} =0V		0.85	1.2	V
Maximum Body-Diode Continuous Current	I _S				0.5	A
Gate Resistance	R _g	f=1 MHz, Open drain		50		Ω
Dynamic Parameters^B						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHZ		33		pF
Output Capacitance	C _{oss}			20		
Reverse Transfer Capacitance	C _{rss}			10		
Switching Parameters^B						
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =10V, I _D =0.5A		0.8		nC
Gate Source Charge	Q _{gs}			0.3		
Gate Drain Charge	Q _{gd}			0.15		
Reverse Recovery Charge	Q _{rr}	I _F =0.5A, di/dt=20A/us		0.4		
Reverse Recovery Time	t _{rr}			14.4		
Turn-on Delay Time	t _{D(on)}	V _{GS} =4.5V, V _{DD} =10V, R _G =10Ω, I _D =500mA		4		ns
Turn-on Rise Time	t _r			18.8		
Turn-off Delay Time	t _{D(off)}			10		
Turn-off Fall Time	t _f			23		

A. Repetitive Rating: Pulse width limited by maximum junction temperature.

B. These parameters have no way to verify.

C. Pulse Test: Pulse Width≤300us, Duty Cycle≤0.5%.



■ Typical Performance Characteristics

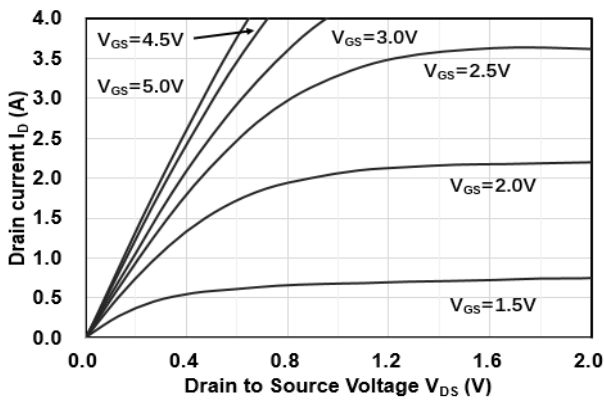


Figure1. Output Characteristics

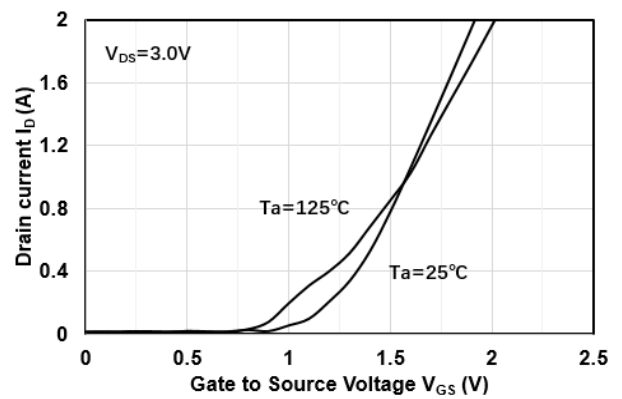


Figure2. Transfer Characteristics

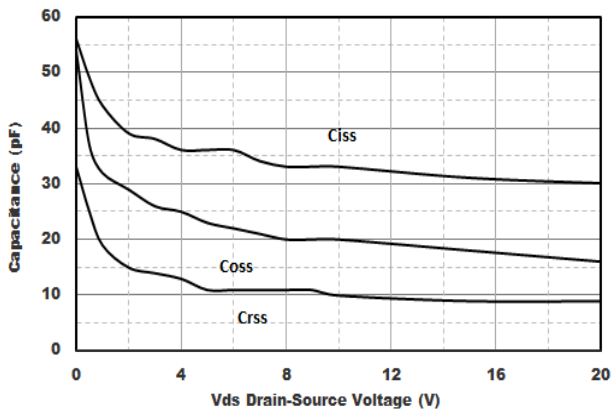


Figure3. Capacitance Characteristics

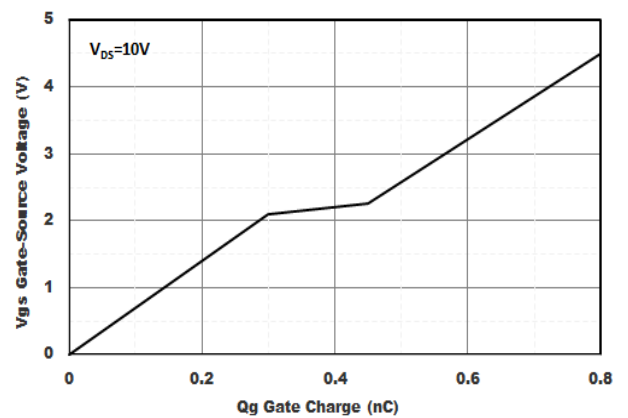


Figure4. Gate Charge

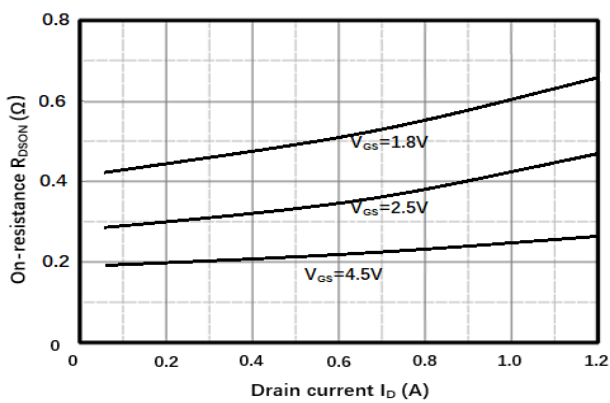


Figure5. Drain-Source on Resistance

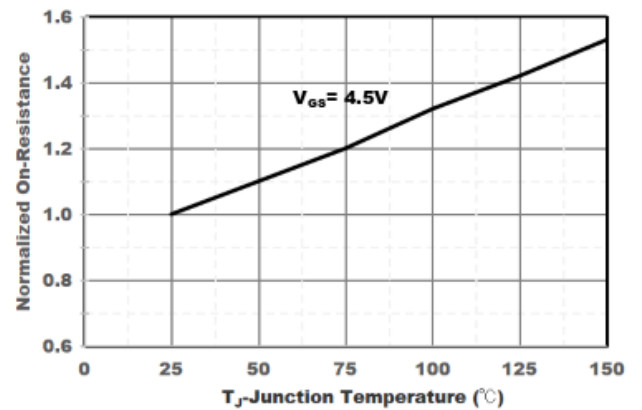


Figure6. Drain-Source on Resistance



YJL3134KA

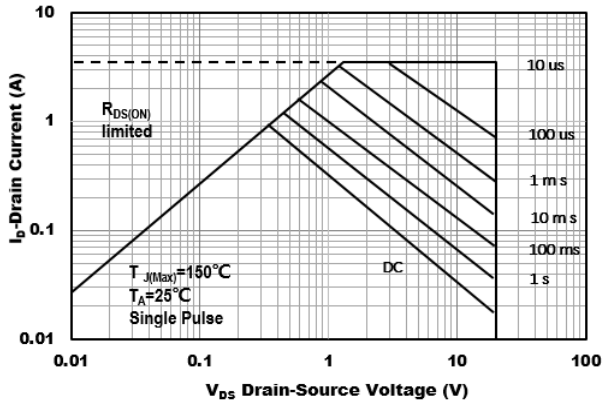


Figure7. Safe Operation Area

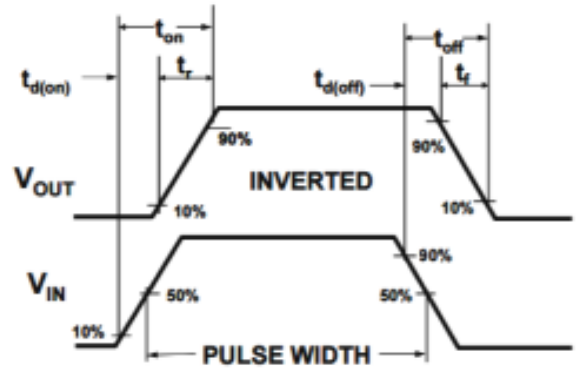
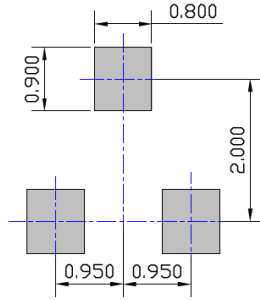
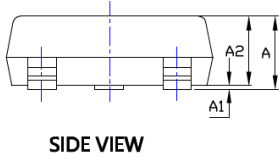
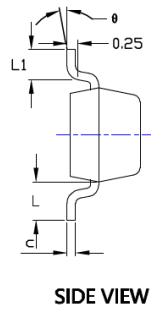
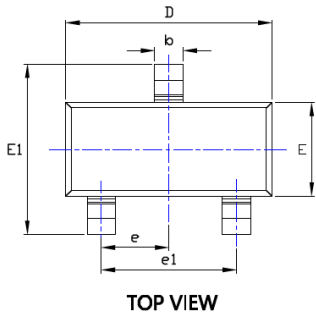


Figure8. Switching wave



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■SOT-23 Package information



UNIT: mm

SUGGESTED SOLDER PAD LAYOUT

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.200	0.300	0.500
θ	0°	8°	0°	8°

NOTE:

1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.

2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.

3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



YJL3134KA

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