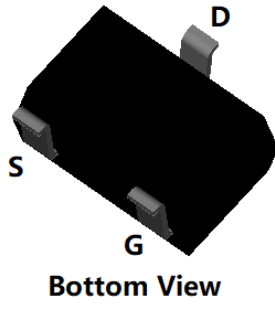
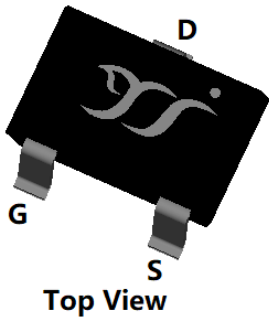
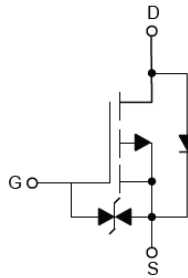


P-Channel Enhancement Mode Field Effect Transistor



SOT-323



Product Summary

V_{DS}	-20V
I_D	-0.5A
$R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	850 mohm
$R_{DS(ON)}$ (at $V_{GS}=-2.5V$)	1200 mohm
$R_{DS(ON)}$ (at $V_{GS}=-1.8V$)	2000 mohm
ESD Protected Up to 2.0KV (HBM)	

General Description

Trench Power LV MOSFET technology
High Density Cell Design for Low $R_{DS(ON)}$
High Speed switching

Applications

Interfacing, Logic switch
Load switch
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}	12	V
Drain Current	I_D	$T_A=25$ Steady State	-0.5
		$T_A=70$ Steady State	-0.4
Pulsed Drain Current ^A	I_{DM}	-2.6	A
Total Power Dissipation @ $T_A=25$ Steady State	P_D	0.15	W
Thermal Resistance Junction-to-Ambient @ Steady State ^B	R_{JA}	833	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 +150	

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL3139KBW	F2	39KB.	3000	30000	120000	7" reel



YJL3139KBW

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 _C =25			-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = 10V, V _{DS} =0V		1.5	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	-0.62	-1.2	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D =-0.5A		580	850	m
		V _{GS} = -2.5V, I _D =-0.3A		855	1200	
		V _{GS} = -1.8V, I _D =-0.2A		1350	2000	
Diode Forward Voltage	V _{SD}	I _S =-0.5A, V _{GS} =0V		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	I _S				-0.5	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHZ		71		pF
Output Capacitance	C _{oss}			20		
Reverse Transfer Capacitance	C _{rss}			15		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-4.5V, V _{DD} =-10V, I _D =-0.5A		1.24		
Gate Source Charge	Q _{gs}			0.37		
Gate Drain Charge	Q _{gd}			0.27		
Reverse Recovery Chrage	Q _{rr}	I _F =-0.5A, di/dt=-20A/us		0.97		
Reverse Recovery Time	t _{rr}			26		
Turn-on Delay Time	t _{D(on)}	V _{GS} =-4.5V, V _{DD} =-10V, R _L =2.5 , R _{GEN} =3		4		ns
Turn-on Rise Time	t _r			19		
Turn-off Delay Time	t _{D(off)}			16		
Turn-off Fall Time	t _f			25		

- A. Pulse Test: Pulse Width 300us, Duty cycle 2%.
 B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.



Typical Performance Characteristics

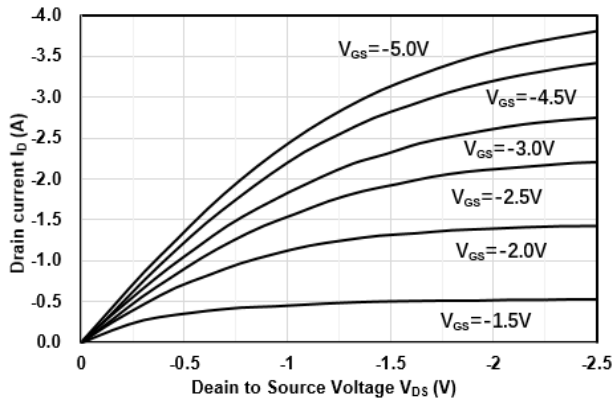


Figure1. Output Characteristics

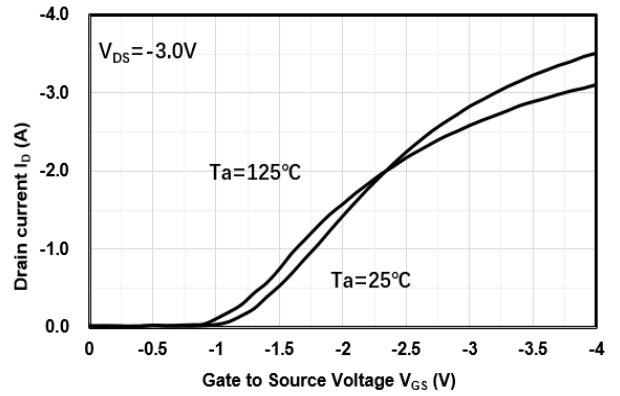


Figure2. Transfer Characteristics

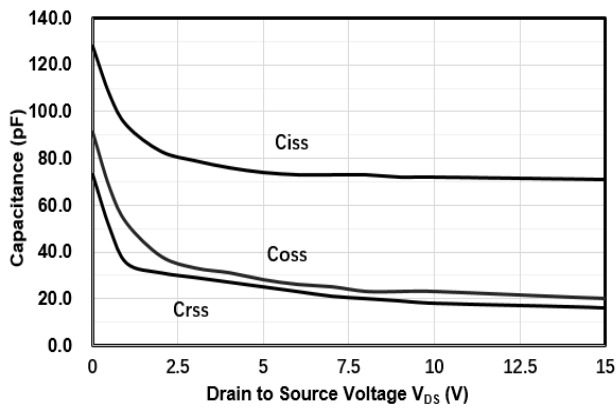


Figure3. Capacitance Characteristics

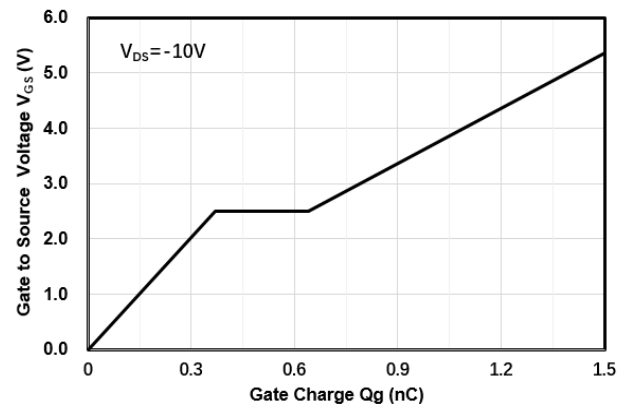


Figure4. Gate Charge

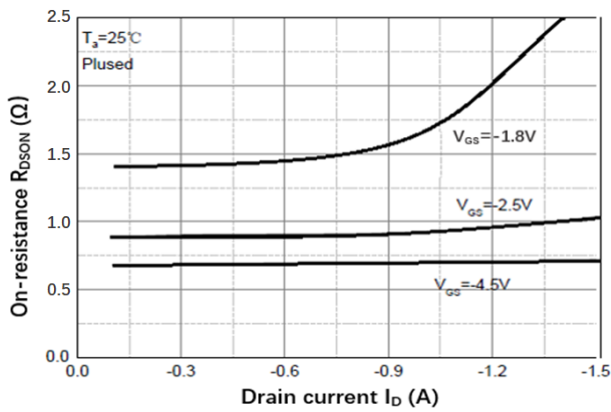


Figure5. Drain-Source on Resistance

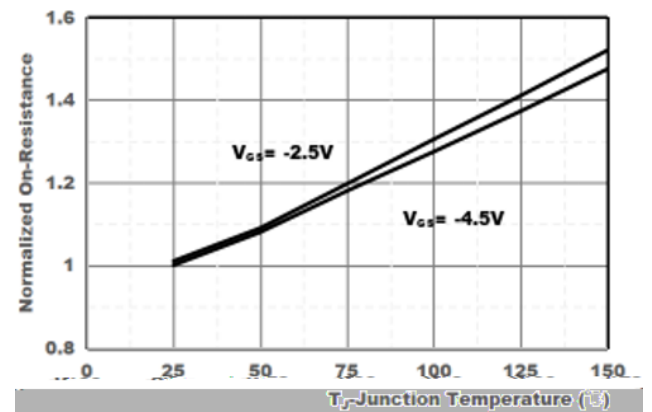
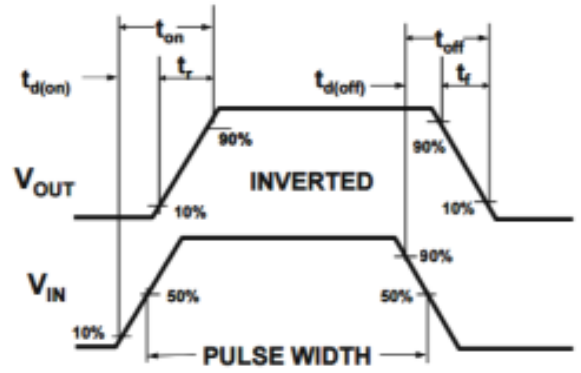
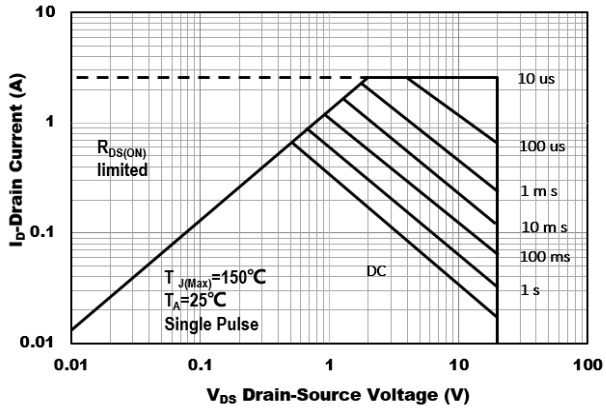


Figure6. Drain-Source on Resistance



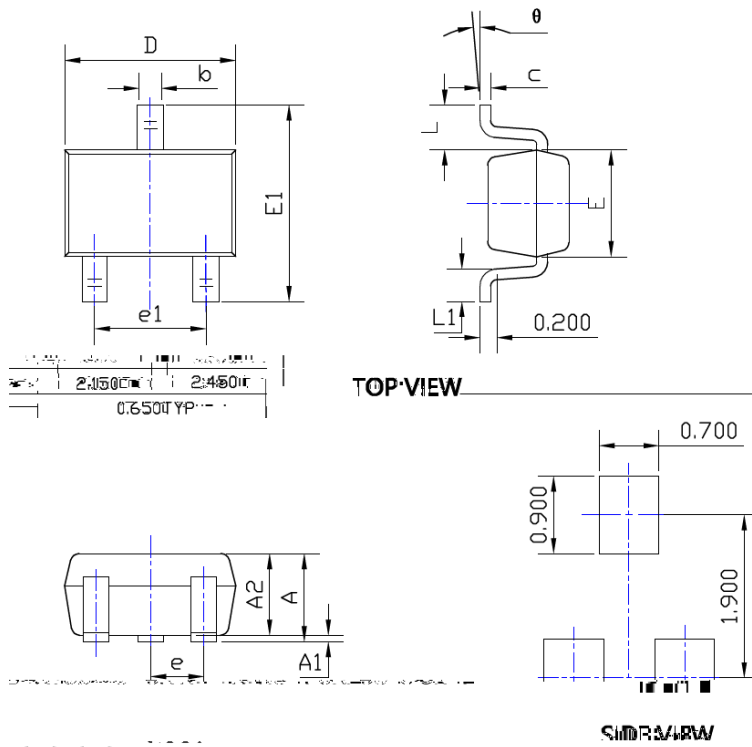
YJL3139KBW





YJL3139KBW

SOT-323 Package information



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200

e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
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.

UNIT: mm
 SOLDER PAD LAYOUT

SUGGESTED S



YJL3139KBW

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