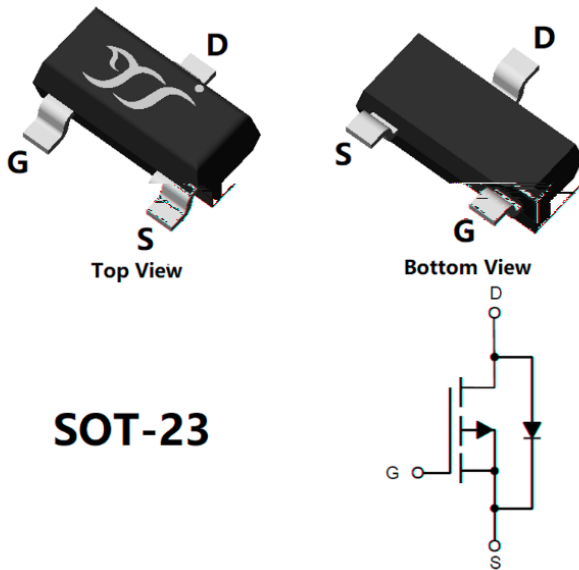


P-Channel Enhancement Mode Field Effect Transistor



SOT-23

Product Summary

• V_{DS}	-20V
• I_D	-5.4A
• $R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	40m Ω
• $R_{DS(ON)}$ (at $V_{GS}=-2.5V$)	55m Ω

General Description

- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Part no. with suffix "Q" means AEC-Q101 qualified
- Halogen Free

Applications

- Power management
- Portable equipment

■ Absolute Maximum Ratings ($T_A=25$ 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	$T_A=25$	-5.4
		$T_A=100$	-4.0
Pulsed Drain Current ^A	I_{DM}	-20	A
Total Power Dissipation ^B	P_D	$T_A=25$	1.25
		$T_A=100$	0.5
Junction and Storage Temperature Range	T_J, T_{STG}	-55 +150	

■ Thermal resistance

Parameter	Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient ^C	$R_{\theta JA}$	80	100	/W

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL2305CHQ	F2	S5 _C	3000	30000	120000	7" reel



YJL2305CHQ

■ 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	-	-	-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±12V, V _{DS} =0V			-100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-250μA	-0.4	-0.65	-1.0	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-5.4A		30	40	mΩ
		V _{GS} =-2.5V, I _D =-4A		39	55	mΩ
Diode Forward Voltage	V _{SD}	I _S =-5.4A, V _{GS} =0V			-1.2	V
Gate resistance	R _G	f=1MHz	-	13	-	Ω
Dynamic Parameters						
Input Capacitance	C _{iss}	z	-	770	-	pF
			-	115	-	
			-	98	-	
A			-	10.5	-	nC
			-	1.52	-	
			-	2.42	-	



YJL2305CHQ

Typical Electrical and Thermal Characteristics Diagrams

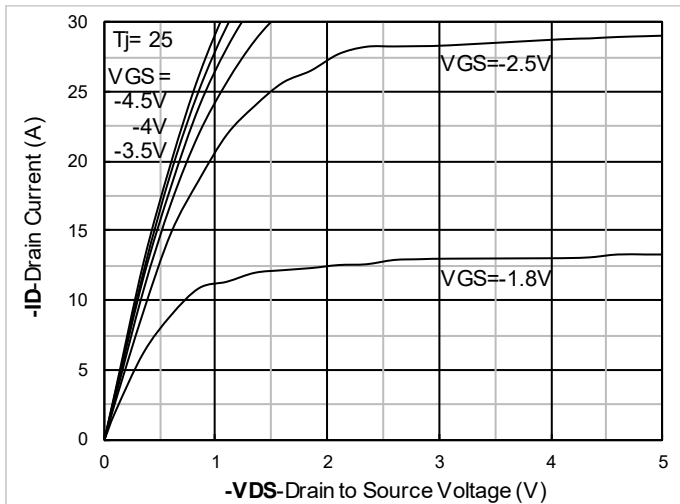


Figure 1. Output Characteristics

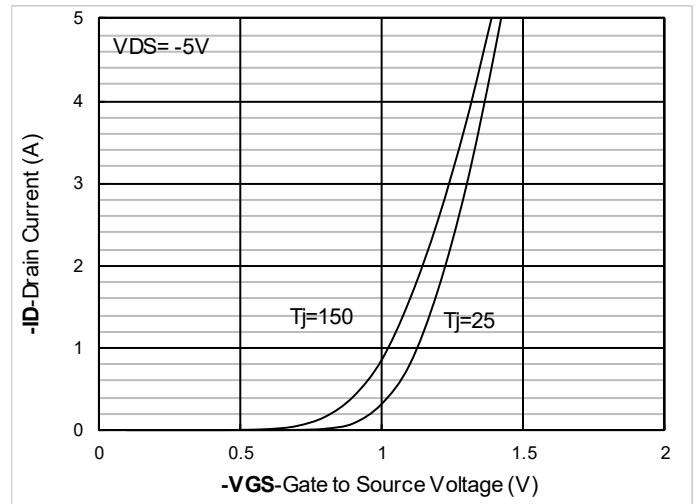


Figure 2. Transfer Characteristics

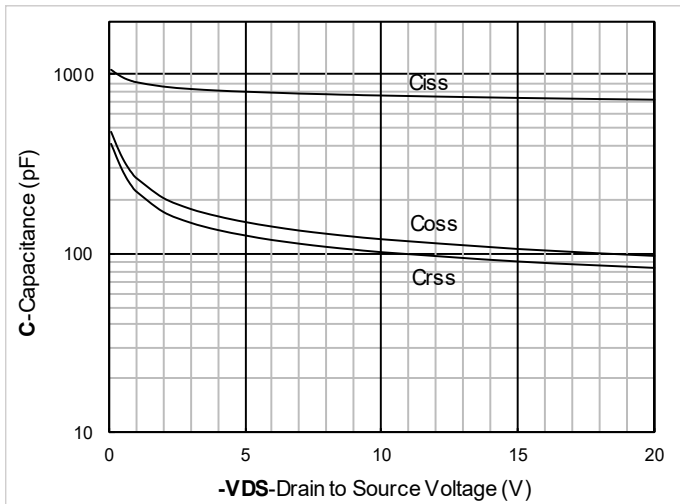


Figure 3. Capacitance Characteristics

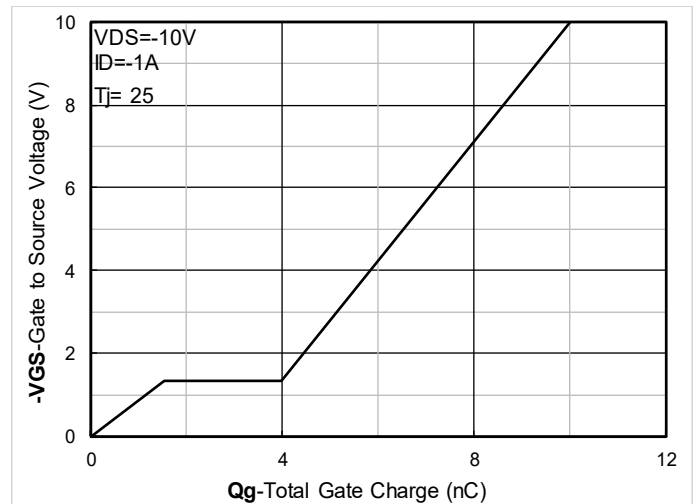


Figure 4. Gate Charge

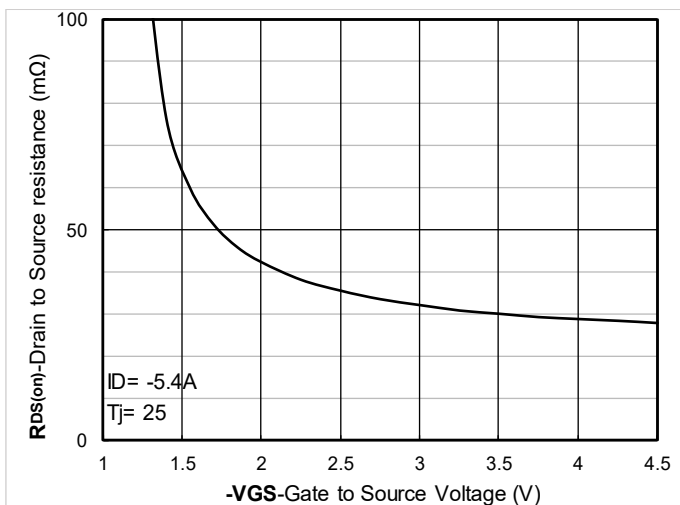


Figure 5. On-Resistance vs Gate to Source Voltage

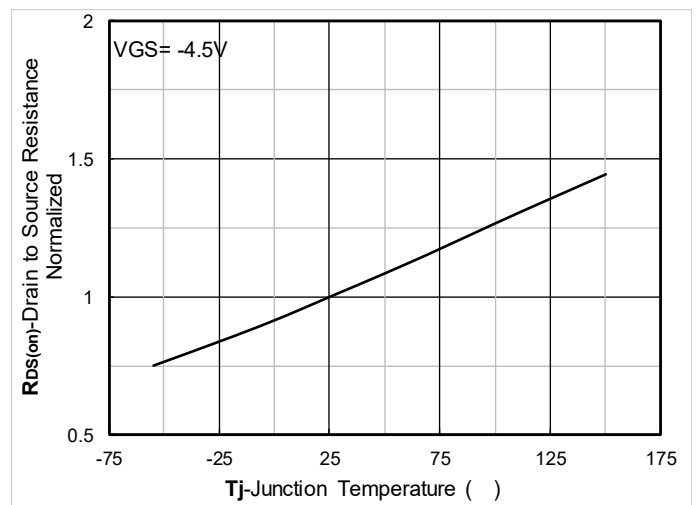


Figure 6. Normalized On-Resistance



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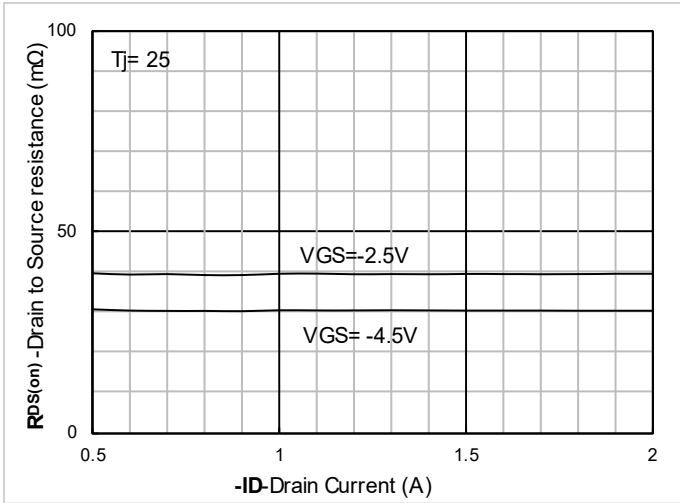


Figure 7. $R_{DS(on)}$ VS Drain Current

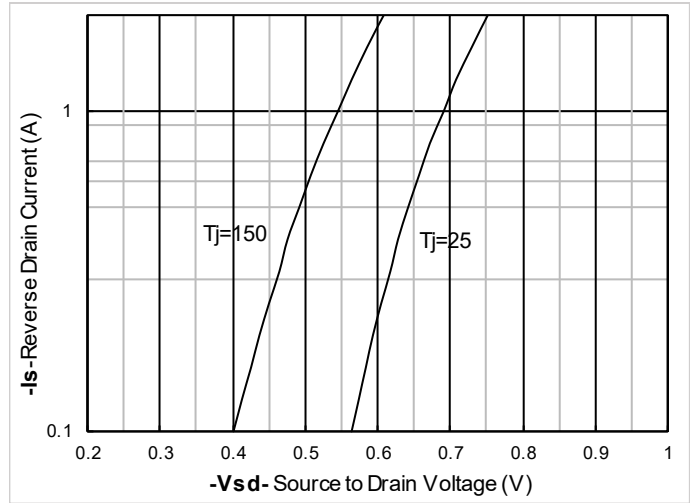


Figure 8. Forward characteristics of reverse diode

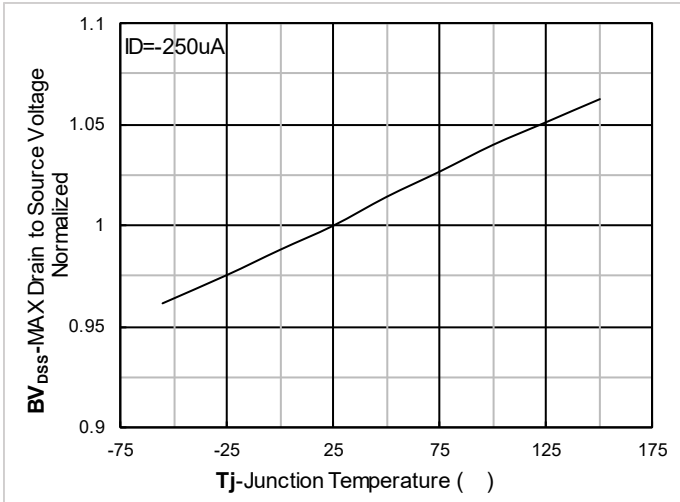


Figure 9. Normalized breakdown voltage

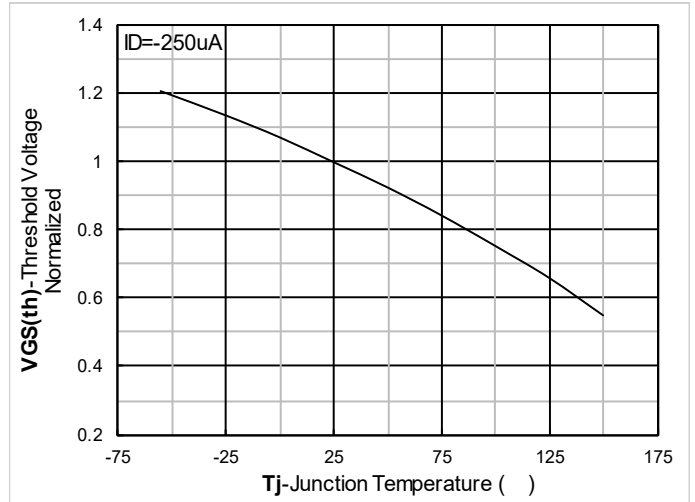


Figure 10. Normalized Threshold voltage

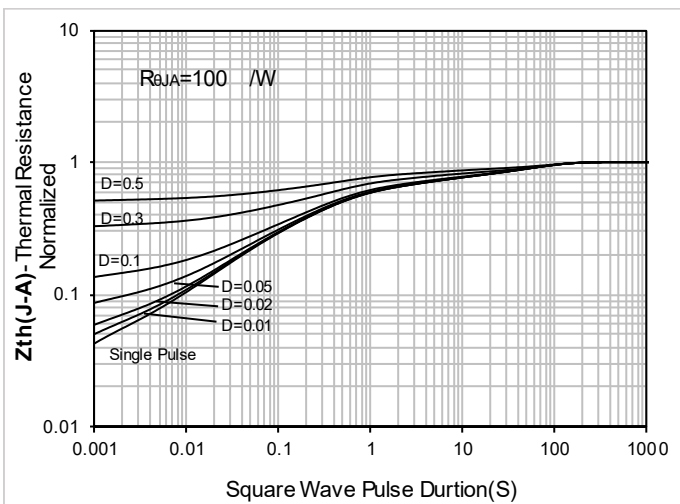


Figure 11. Maximum Transient Thermal Impedance

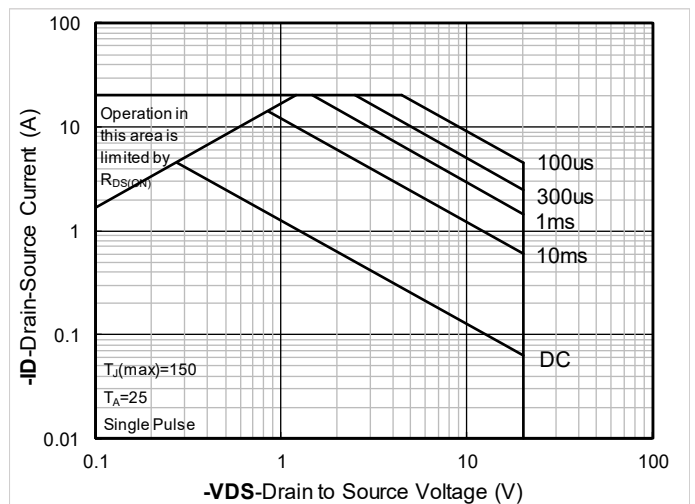
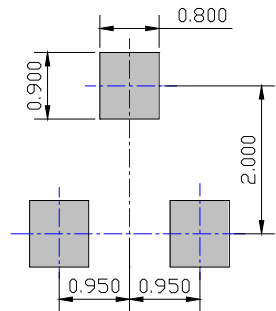
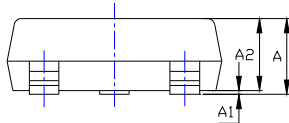
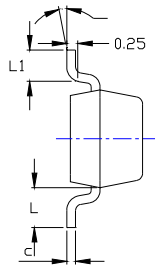
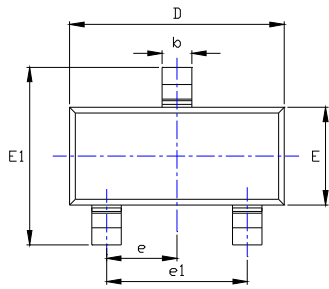


Figure 12. Safe Operation Area



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■ SOT-23 Package information

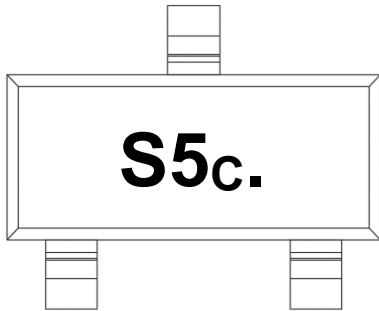


UNIT mm

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	0.020	0.300	0.500
	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.

■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. S5c is Marking Code
4. Body color: Black



YJL2305CHQ

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