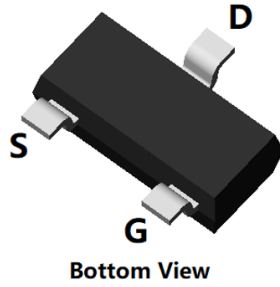
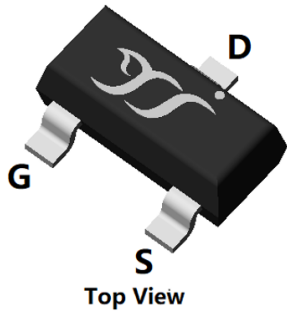
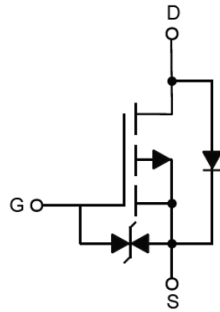


P-Channel Enhancement Mode Field Effect Transistor



SOT-23



Product Summary

- V_{DS} -20 V
- I_D -5 A
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <40 m Ω
- $R_{DS(ON)}$ (at $V_{GS}=-2.5V$) <70 m Ω
- ESD Protected Up to 2.0KV (HBM)

General Description

- Split gate trench MOSFET technology
- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Excellent stability and uniformity
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

- Power management
- Portable equipment

■ 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}	± 10	V	
Drain Current	I_D	$T_A=25$	-5	A
		$T_A=100$	-3.2	
Pulsed Drain Current ^A	I_{DM}	-30	A	
Total Power Dissipation ^C	P_D	$T_A=25$	1	W
		$T_A=100$	0.4	
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150		

■ Thermal resistance

Parameter	Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient ^D	$R_{\theta JA}$	100	120	μW

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL3415KC	F2	3415C	3000	30000	120000	7" reel



YJL3415KC

■ Electrical Characteristics ($T_J=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$	-	-	-1	μA
		$V_{DS}=-20V, V_{GS}=0V, T_J=150$	-	-	-100	
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$	-	-	± 10	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.55	-0.85	-1.25	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-5A$	-	28	40	m Ω
		$V_{GS}=-2.5V, I_D=-4A$	-	50	70	
Diode Forward Voltage	V_{SD}	$I_S=-5A, V_{GS}=0V$	-	-0.9	-1.2	V
Gate resistance	R_G	f=1MHz, Open drain	-	16	-	Ω
Maximum Body-Diode Continuous Current	I_S		-	-		



Typical Electrical and Thermal Characteristics Diagrams

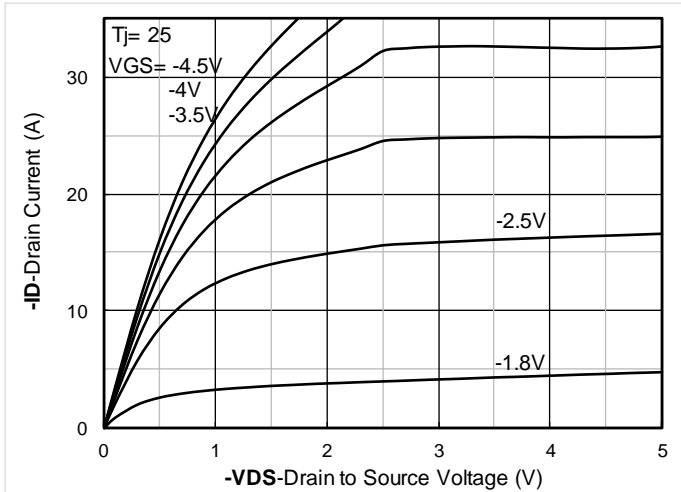


Figure 1. Output Characteristics

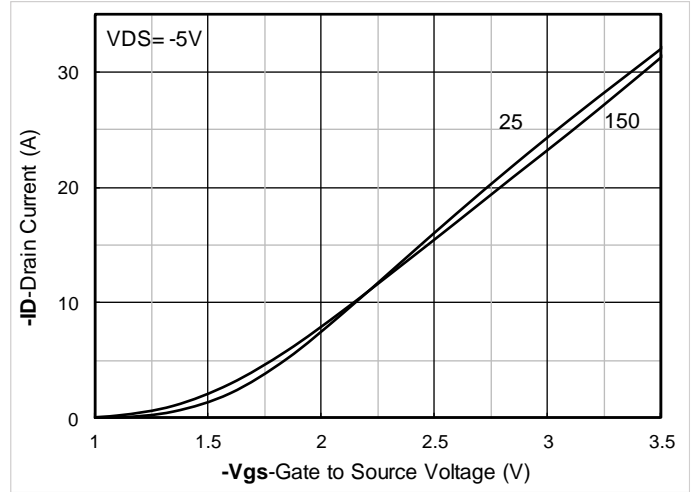


Figure 2. Transfer Characteristics

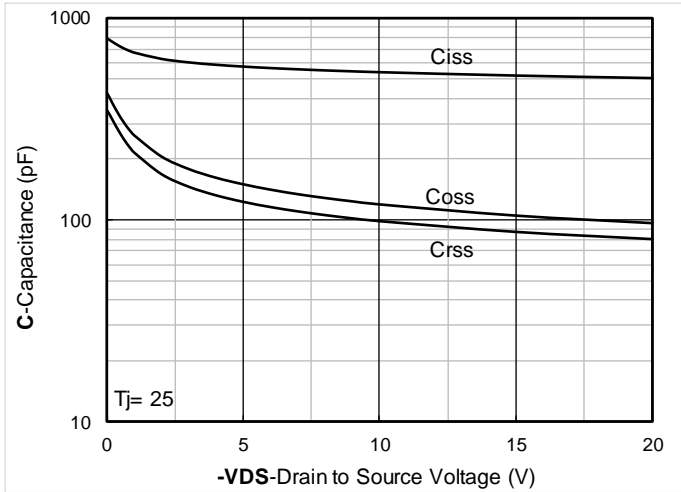


Figure 3. Capacitance Characteristics

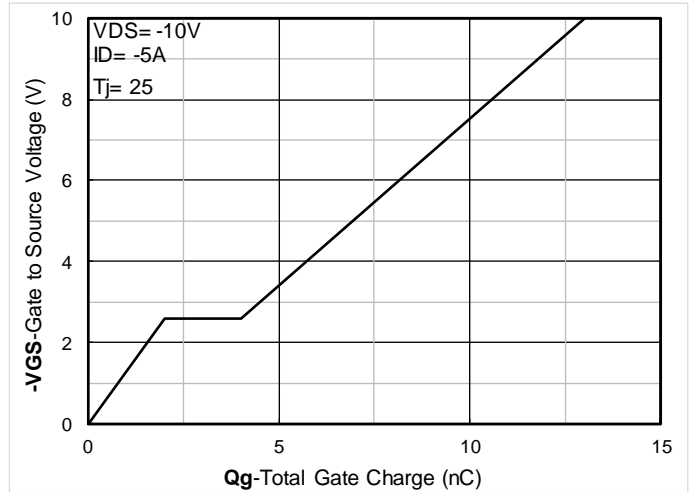


Figure 4. Gate Charge

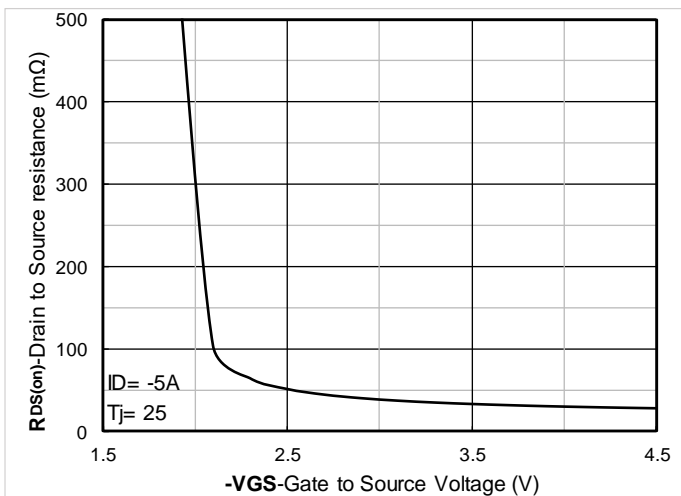


Figure 5. On-Resistance vs Gate to Source Voltage

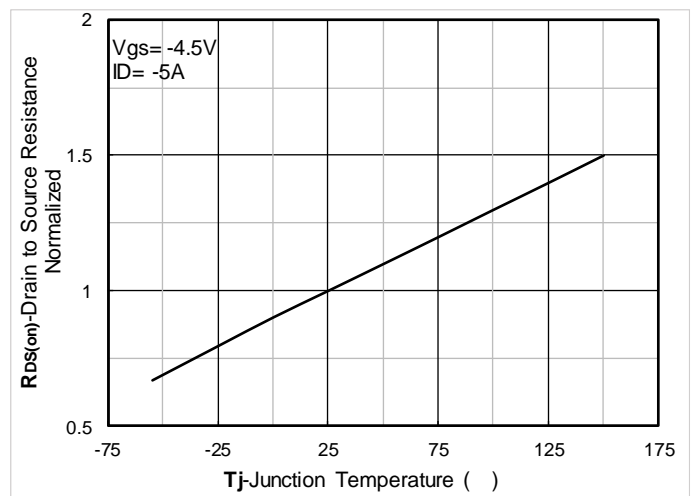


Figure 6. Normalized On-Resistance



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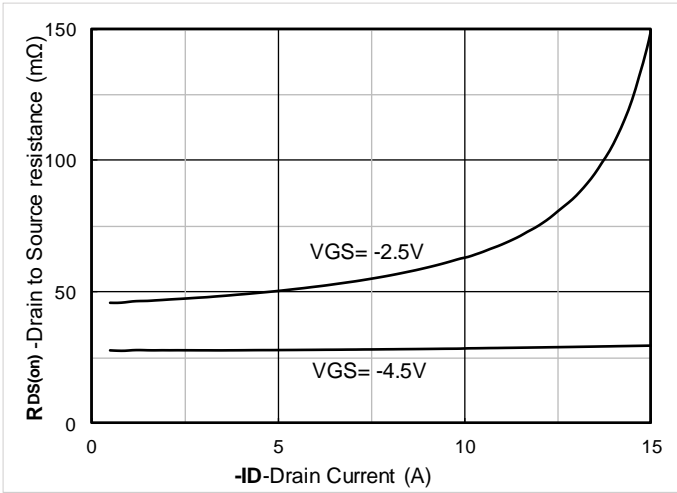


Figure 7. $R_{DS(on)}$ VS Drain Current

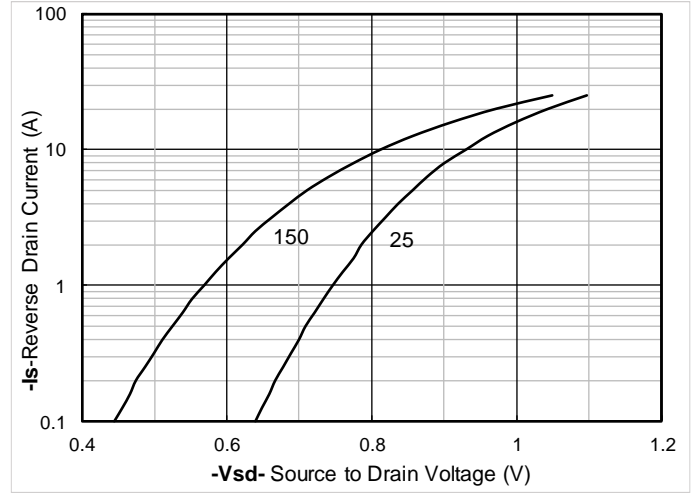


Figure 8. Forward characteristics of reverse diode

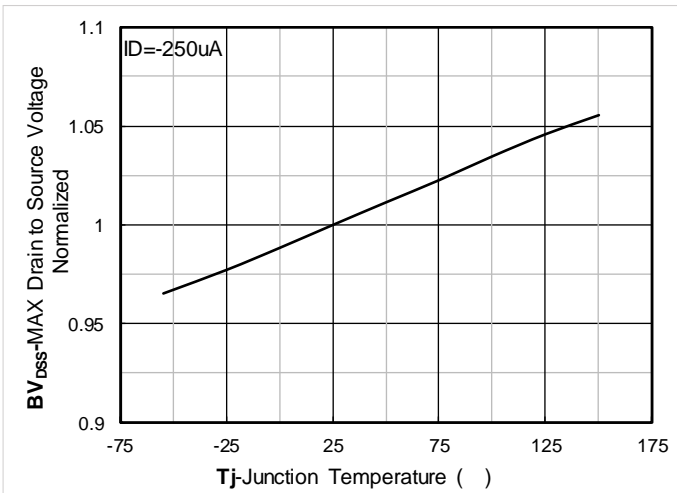


Figure 9. Normalized breakdown voltage

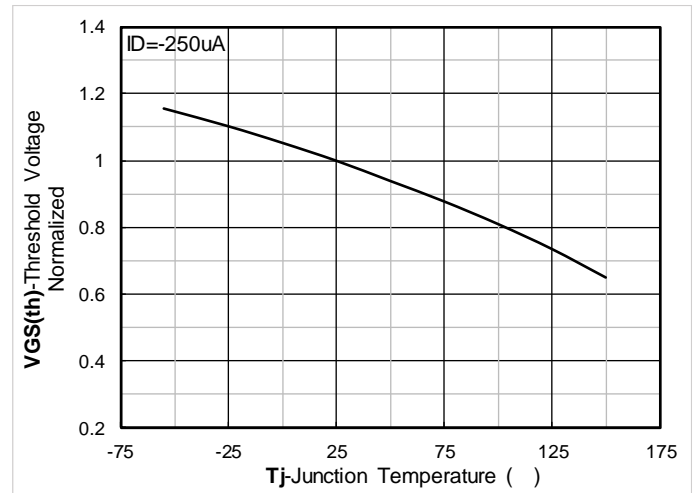


Figure 10. Normalized Threshold voltage

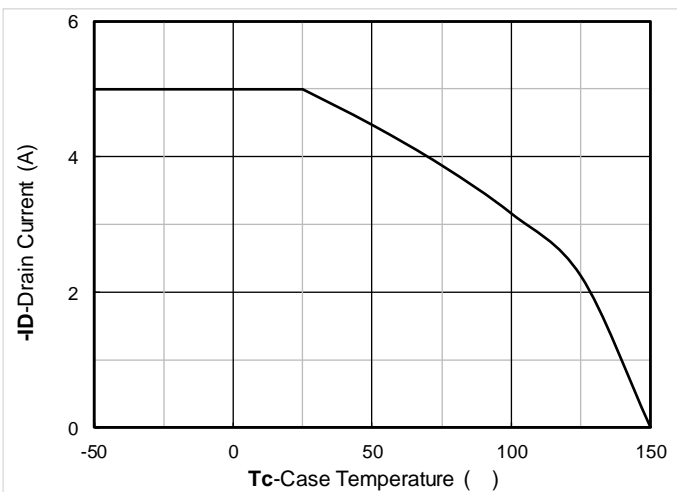


Figure 11. Current dissipation

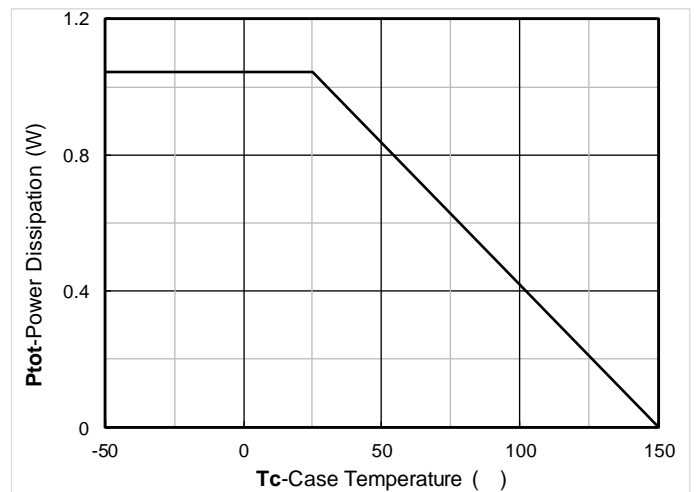


Figure 12. Power dissipation



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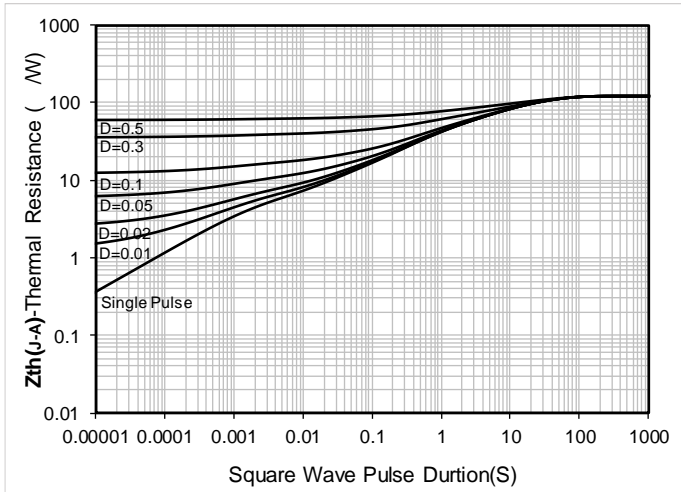


Figure 13. Maximum Transient Thermal Impedance

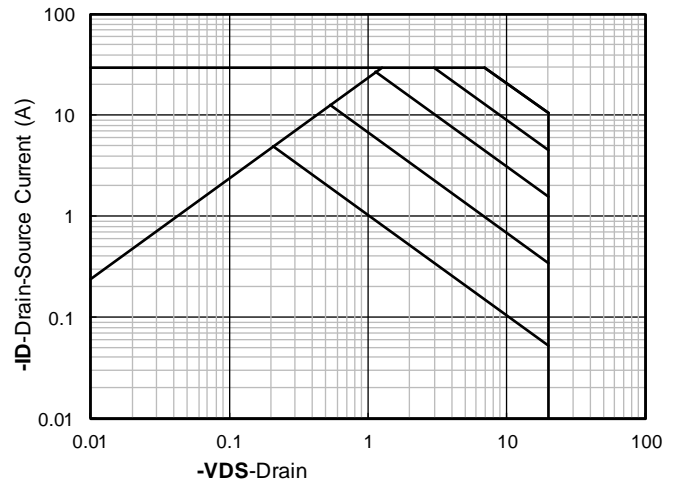
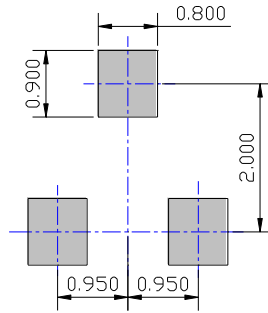
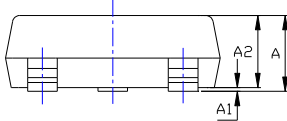
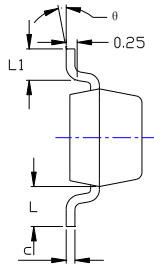
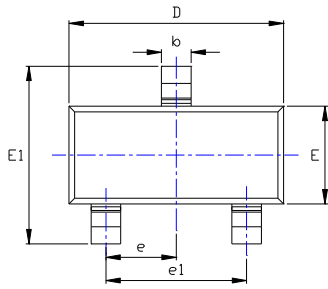


Figure 14. Safe Operation Area



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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
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.



YJL3415KC

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