

VC9321A

P-Channel Enhancement Mode MOSFET

Features

VDS	VGS	RDSon TYP	ID
-20V	±8V	420mR@-4V5	-0.67A
		600mR@-2V5	
		900mR@-1V8	

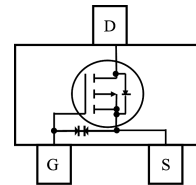
General Description

This device is a P-Channel enhancement mode MOSFET which is produced with high cell density and DMOS trench technology. This device particularly suits low voltage applications, especially for battery powered circuits, the tiny and thin outline saves PCB consumption.

Applications

- Load switch;
- Level shift;
- Cell Phone

Pin Configuration(SOT723 Top View)



Absolute Maximum Ratings @ TA = 25°C unless otherwise specified

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±8	
Drain Current (Note 1)	Continuous	I_D	-0.67	A
	Pulsed		-1.35	
Power Dissipation Derating above $T_A = 25^\circ\text{C}$ (Note 1)		P_d	175	mW
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

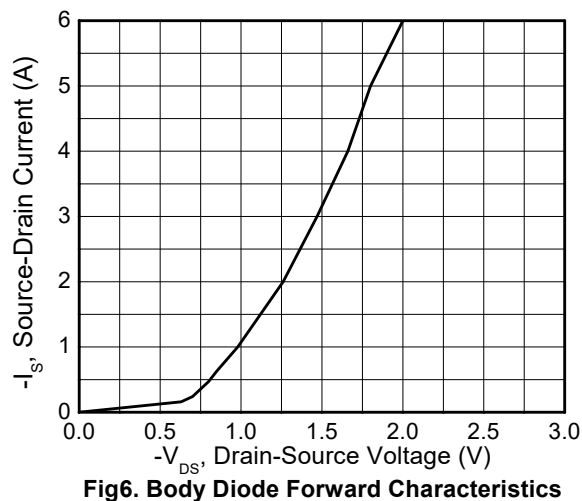
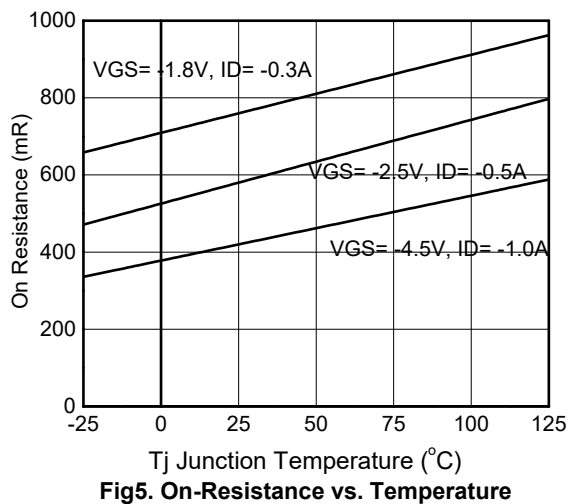
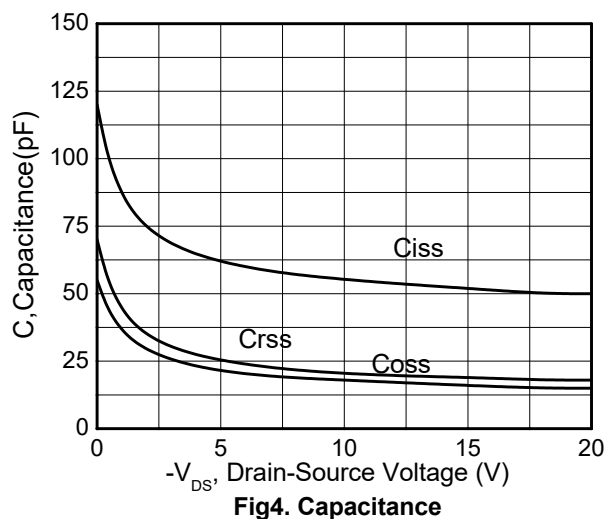
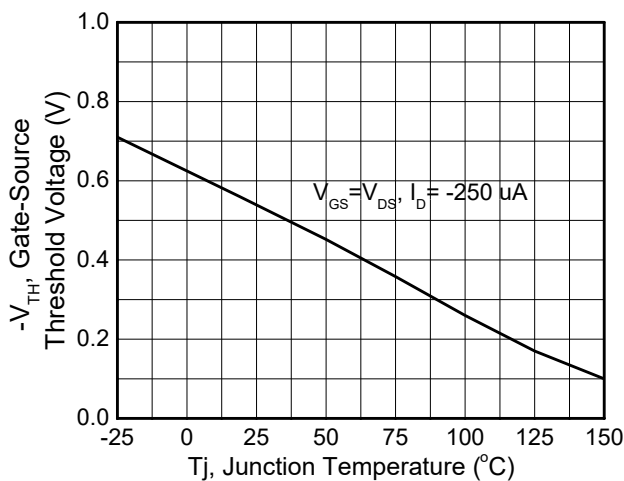
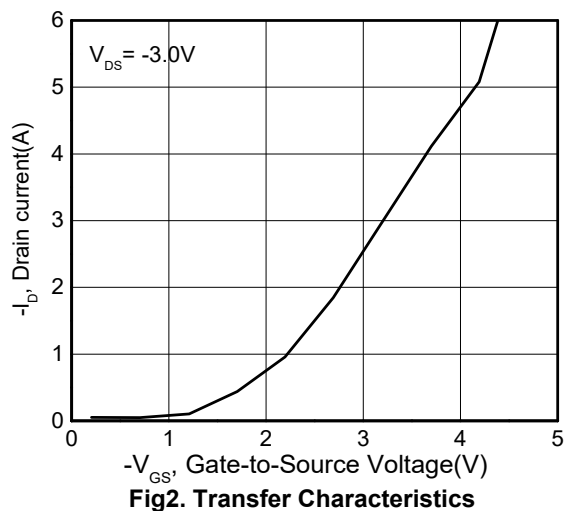
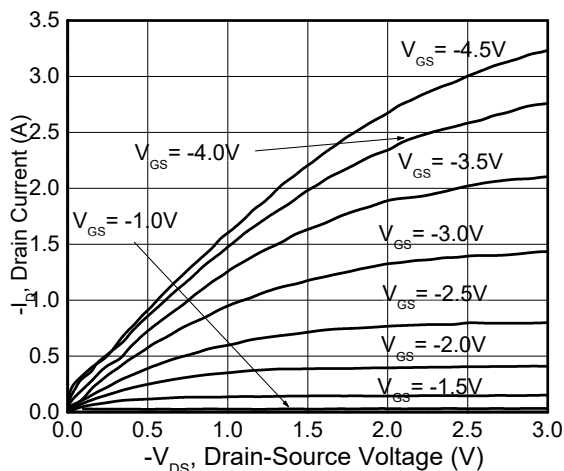
Note1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inches. The rating is for each chip in the package.

Electrical Characteristics @ TA = 25°C unless otherwise specified

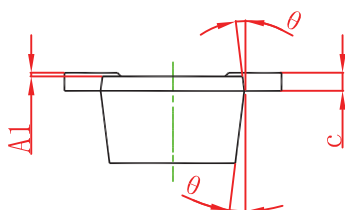
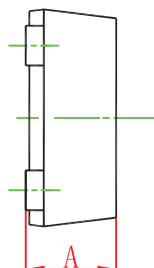
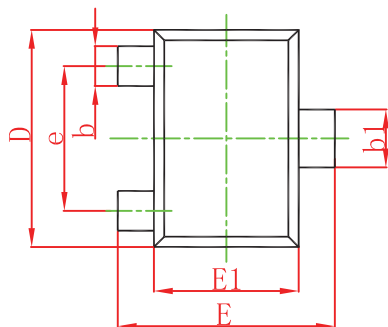
Parameter (Note 2)	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16V, V_{GS} = 0V$	--	--	1	uA
Gate-Body Leakage	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$	--	--	±10	uA
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.35	-0.60	-1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$I_D = -0.55A, V_{GS} = -4.5V$	--	420	750	mR
		$I_D = -0.35A, V_{GS} = -2.5V$	--	600	1000	
		$I_D = -0.25A, V_{GS} = -1.8V$	--	900	2000	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -6V, R_L = 6R, I_D = -1A,$ $V_{GEN} = -4.5V, R_G = 6R$	--	10	--	ns
Turn-On Rise Time	t_r		--	62	--	
Turn-Off Delay Time	$t_{d(off)}$		--	19	--	
Turn-Off Fall Time	t_f		--	18	--	
Input Capacitance	C_{ISS}	$V_{DS} = -6V, V_{GS} = 0V,$ $f = 200KHz$	--	50	--	pF
Output Capacitance	C_{OSS}		--	15	--	
Reverse Transfer Capacitance	C_{RSS}		--	15	--	
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = -0.1A$	--	-0.8	-1.2	V

Note2. Short duration test pulse used to minimize self-heating effect.

● Typical Performance Characteristics

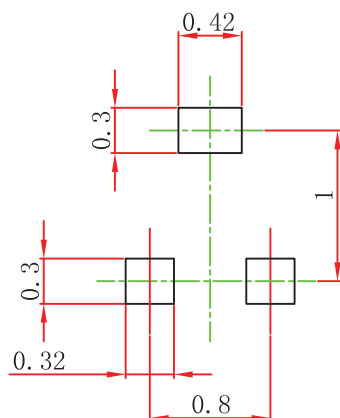


SOT-723 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	

SOT-723 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

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