VIC1224DJ

N-Channel Enhancement Mode MOSFET

● DESCRIPTION

The VIC1224 is the n-channel logic enhancement mode power field effect transistor is produced using high cell density. advanced trench technology to provide excellent Rds(on).

This device is suitable for use as a load swith or in PWM applications.

These devices are particularly suited for low voltage application, and low in-line power loss are needed in a very small outline surface mount package.

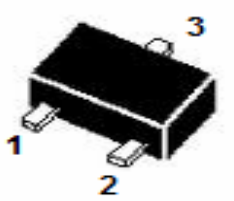
● FEATURE

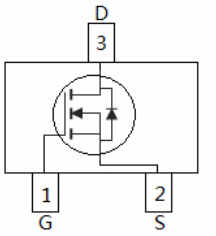
- ◆ V_{DS}=20V;V_{GS}=±12V;I_D=6A
- ◆ $R_{DS(ON)}$=23mΩ(TYP.)@V_{GS}=10V
- ◆ $R_{DS(ON)}$=25mΩ(TYP.)@V_{GS}=4.5V
- ◆ $R_{DS(ON)}$=28mΩ(TYP.)@V_{GS}=2.5V

● APPLICATIONS

- ◆ Power Management in Notebook
- ◆ Potable Equipment
- ◆ Battery Powered System
- ◆ DC/DC Converter
- ◆ Load Switch、DSC LCD Display inverter

● PIN CONFIGURATION





● ABSOLUTE MAXIMUM RATINGS(TA=25℃ Unless otherwise noted)

Symbol	Parameter	Rating		Unit
V_{DS}	Drain-Source Voltage	20		V
V_{GS}	Gate-Source Voltage	±12		
I_D	Continuous Drain Current	VGS=10V	6	A
IDP	Power Dissipation		20	A
TJ	Maximum Junction Temperature		150	℃
T_{STG}	Storage Temperature Range		-55 to 150	
P_D	Maximum Power Dissipation (Ta=25℃)		1.4	W

● ELECTRICAL CHARACTERISTICS(TA=25℃ Unless otherwise noted)

Symbol	Parameter	Test Conditions	VIC1224DJ			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	20	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=20V, V_{GS}=0V	--	--	1	μA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	0.5	0.7	1	V
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±12V, V_{DS}=0V	--	--	±100	nA
$R_{DS(ON)}$ **a**	Drain-Source On-state Resistance	V_{GS}=10V, I_D=6A	--	23	26	mΩ
		V_{GS}=4.5V, I_D=3A		25	30	
		V_{GS}=2.5V, I_D=2A	--	28	35	
Dynamic b						
Qg	Total Gate Charge	V_{GS}=4.5V,V_{DS}=10V, Ids=6A	--	5	10	nC
Qgs	Gate-Source Charge		--	1	--	
Qgd	Gate-Drain Charge		--	1.1	--	
SWITCHING CHARACTERISTICS						
$t_{d(ON)}$	Turn-on Delay Time	V_{DD}=10V,R_L=10Ω, I_{DS}=-1.0A,V_{GEN}=4.5V, R_G=6Ω	--	8	15	ns
$t_{d(OFF)}$	Turn-off Delay Time		--	19	35	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Vsd **a**	Diode Forward Voltage	Is = 1.25A, V_{GS} =0V	--	0.7	1.3	V

Notes:

a. Mounted on a 1in2 FR-4 board with 2oz.Copper in a still air environment 25℃.
b. The current rating is based on the DC(<10s) test conditions
c. Pulse test; pulse width≤300μs,duty cycle ≤2%

The products and product specifications contained herein are subject to change without notice to improve performance characteristics. consult us,or our representatives before use, to confirm that the information in this datasheet is up to date.

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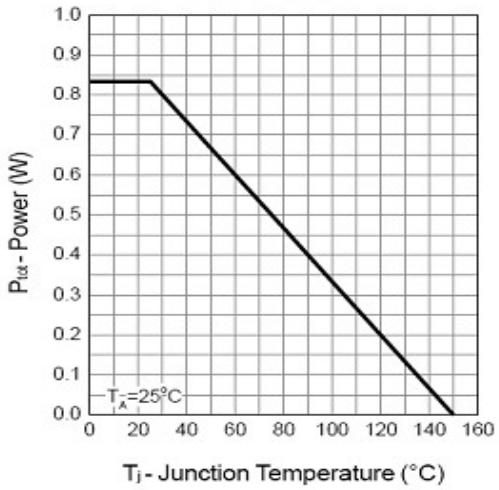
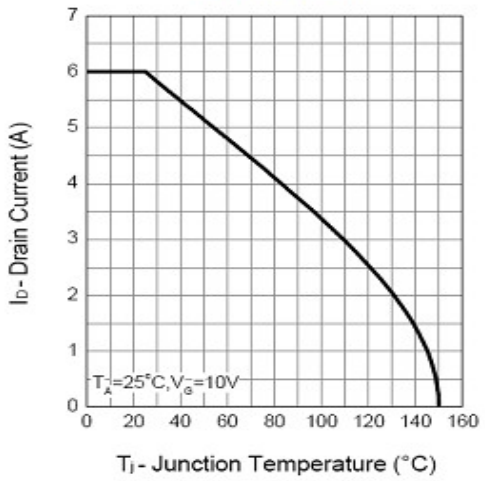
● TYPICAL CHARACTERISTICS (TA=25℃ Unless otherwise noted)

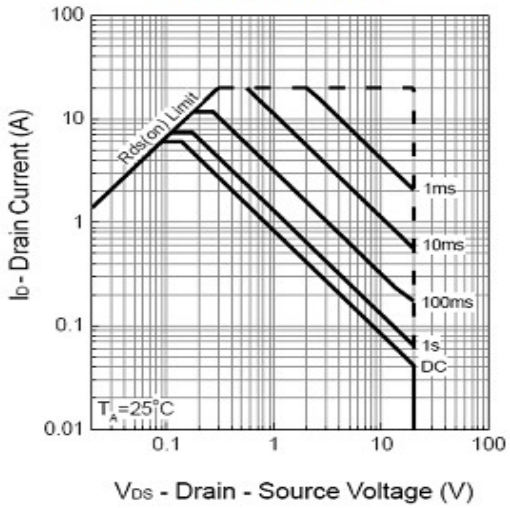
Power Dissipation



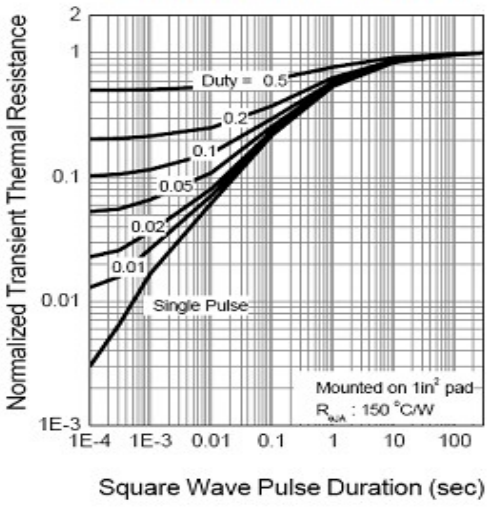
Drain Current



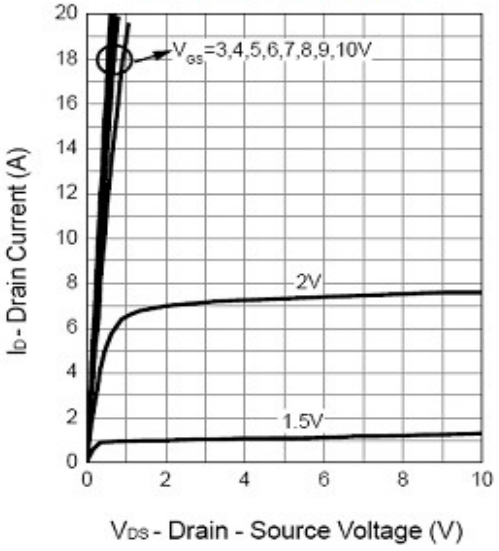
Safe Operation Area



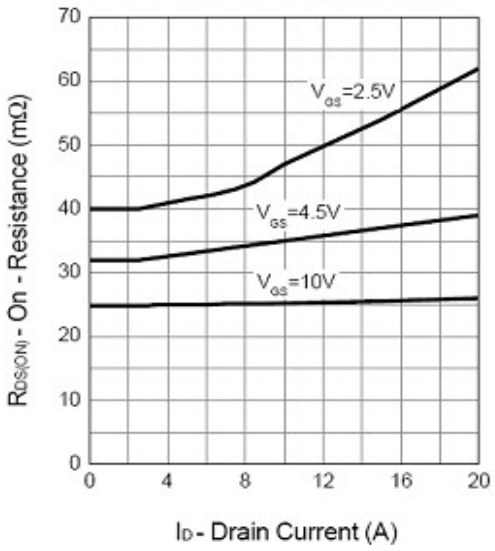
Thermal Transient Impedance



Output Characteristics

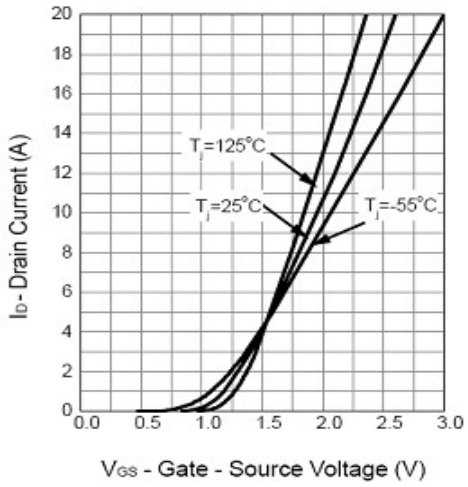


Drain-Source On Resistance

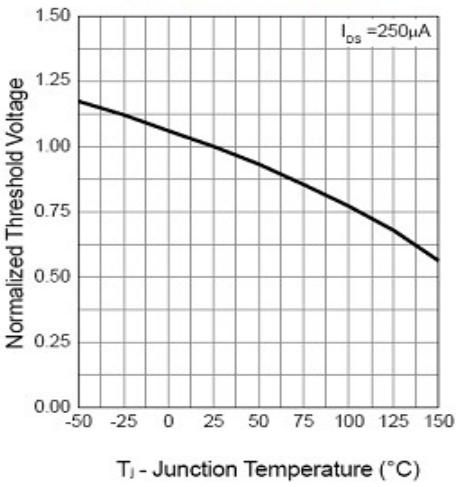


● TYPICAL CHARACTERISTICS (TA=25℃ Unless otherwise noted)

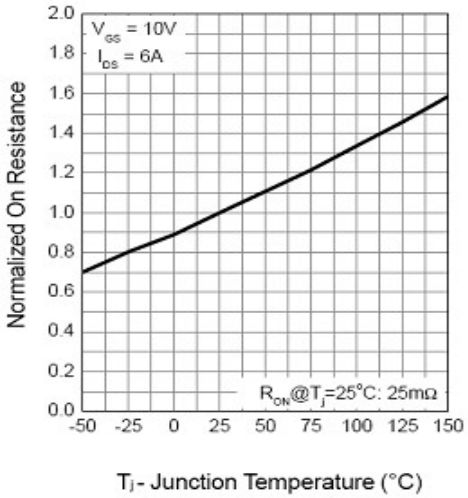
Transfer Characteristics



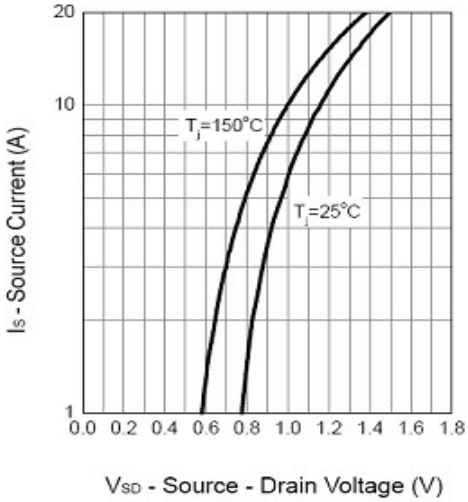
Gate Threshold Voltage



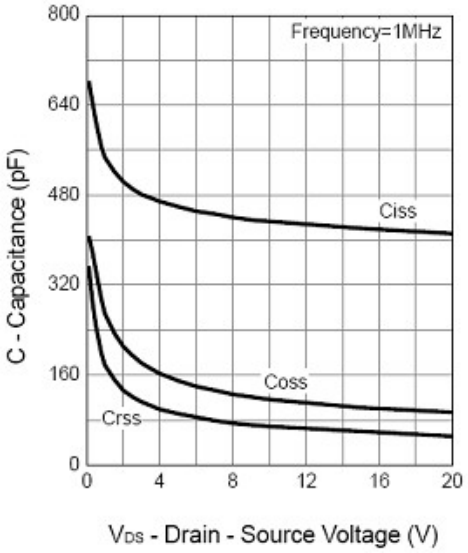
Drain-Source On Resistance



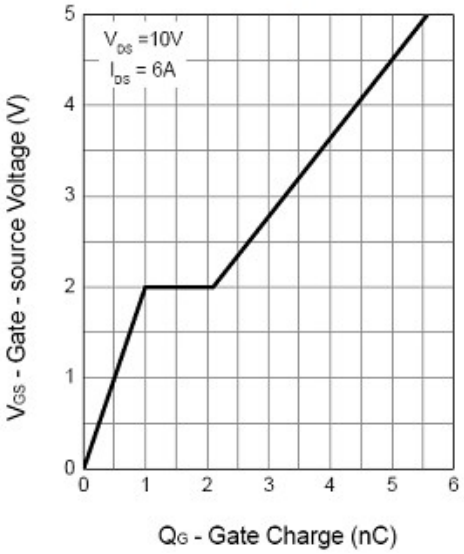
Source-Drain Diode Forward



Capacitance



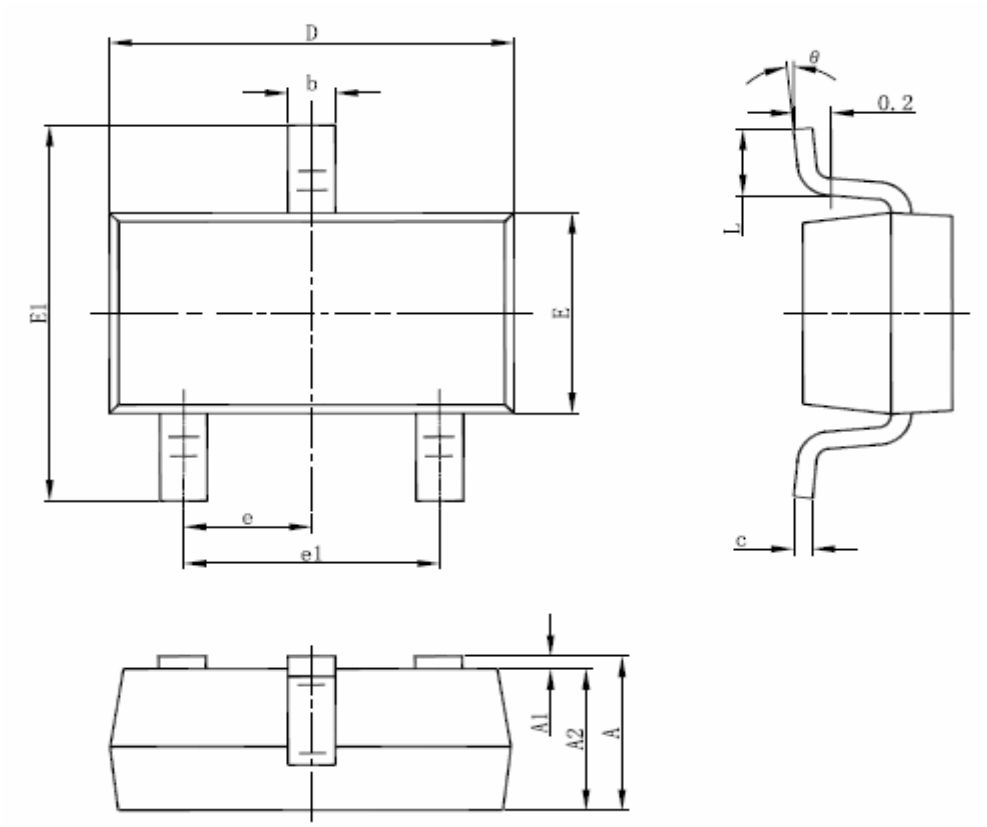
Gate Charge



● ORDERING INFORMATION

Part Number	Package code	Shipping
VIC1224DJ	DI: SOT23-3L	3000/Tape & Reel

● PACKAGE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°