Dual N-Channel Enhancement Mode MOSFET

● DESCRIPTION

The VIC8205 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 Power Management in Notebook Computer, Portable Equipment, and Battery Powered Systems.

● FEATURE

◆ V_{DS}=20V;V_{GS}=±10V;I_D=6A

◆ $R_{DS(ON)}$=23mΩ(TYP.) V_{GS}=4.5V

◆ $R_{DS(ON)}$=34mΩ(TYP.) V_{GS}=2.5V

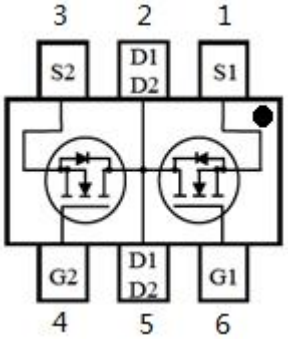
● APPLICATIONS

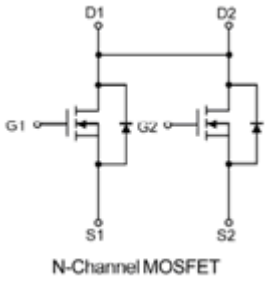
◆ Battery Powered Systems

◆ Portable Equipment

◆ LCD-TV ,LCD-Moniter,NB,UMPC

● PIN CONFIGURATION





N-Channel MOSFET

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

Symbol	Parameter	Rating		Unit
V_{DS}	Drain-Source Voltage	20		V
V_{GS}	Gate-Source Voltage	±10		
I_D	Continuous Drain Current	VGS=10V	6	A
I_{DP}	Drain Current (Pulse)		20	A
TJ	Maximum Junction Temperature		-55 to 150	°C
T_{STG}	Storage Temperature Range		-55 to 150	
P_D	Maximum Power Dissipation (Ta=25℃)		1.6	W

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

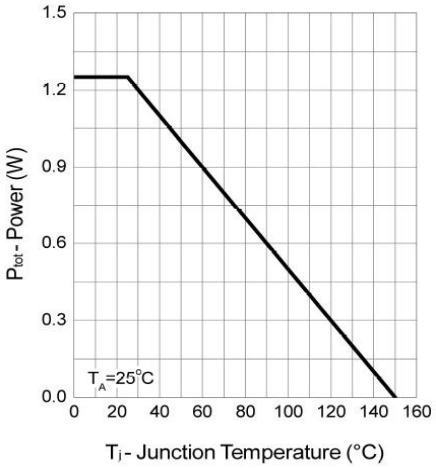
Symbol	Parameter	Test Conditions	VIC8205DL			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	20	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=16V, V_{GS}=0V	--	--	1	uA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	0.5	0.7	1.5	V
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±10V, V_{DS}=0V	--	--	±10	nA
$R_{DS(ON)}$ **a**	Drain-Source On-state Resistance	V_{GS}=2.5V, I_D=5.2A	--	34	45	mΩ
		V_{GS}=4.5V, I_D=6A	--	23	24.5	
gfs	Forward Transconductance **a**	Vds=5V,Id=6A	--	--	--	S
Dynamic b						
Qg	Total Gate Charge	V_{GS}=4.5V,V_{DS}=10V, Id=6A	--	6.3	9	nC
Qgs	Gate-Source Charge		--	0.6	--	
Qgd	Gate-Drain Charge		--	2.4	--	
Ciss	Input Capacitance	V_{GS}=0V,V_{DS}=10V, f=1MHz	--	400	--	pF
Coss	Output Capacitance		--	100	--	pF
Crss	Reverse Transfer Capacitance		--	80	--	pF
SWITCHING CHARACTERISTICS						
$t_{d(ON)}$	Turn-on Delay Time	V_{DD}=10V,I_D=1A,V_{GEN}=4.5V, R_G=6Ω	--	17	32	ns
$t_{d(OFF)}$	Turn-off Delay Time		--	45	82	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
I_S	Drain-Source Diode Forward Current	Vg=Vd=0V,Force Current	--	--	1.7	A
Vsd **a**	Diode Forward Voltage	Is = 1.7A, V_{GS} = 0V	--	0.7	1.3	V

Notes:

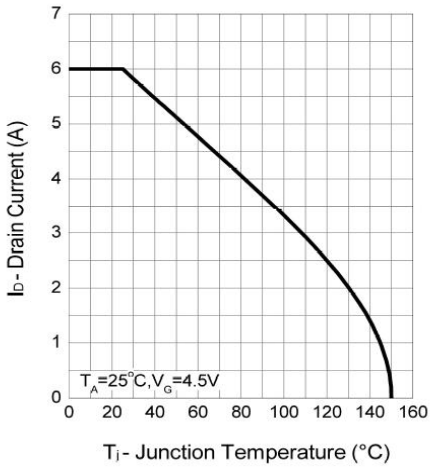
a. Pulse test;pulse width≤ 300us,duty cycle ≤ 2%.
b. Guaranteed by design,not subject to production testing.

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

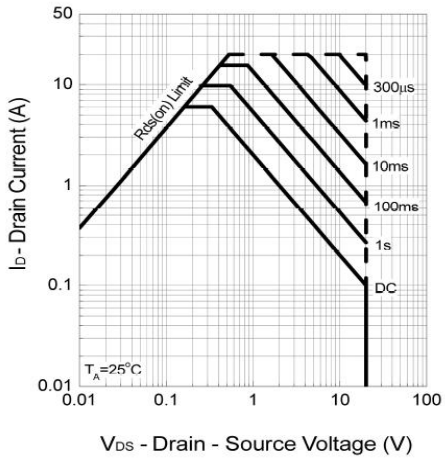
Power Dissipation



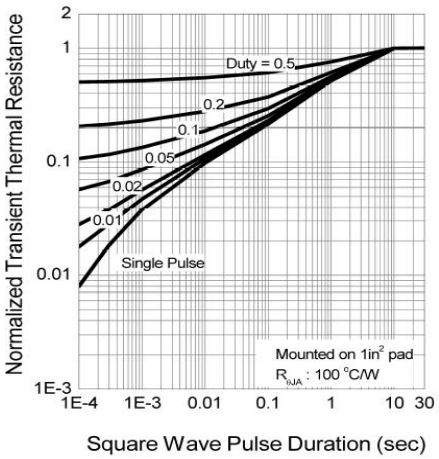
Drain Current



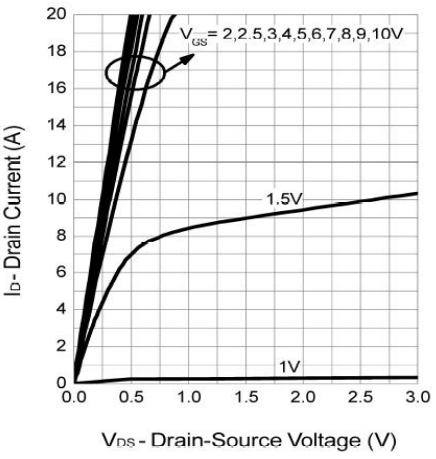
Safe Operation Area



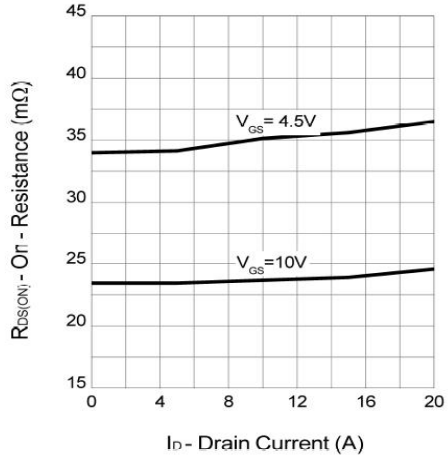
Thermal Transient Impedance



Output Characteristics

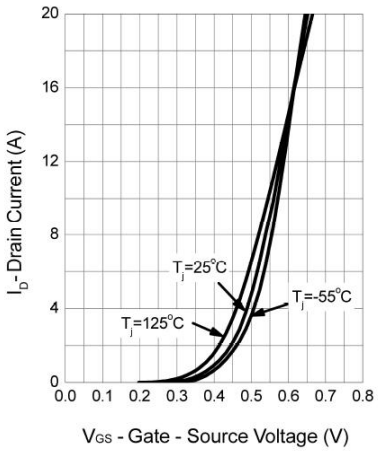


Drain-Source On Resistance

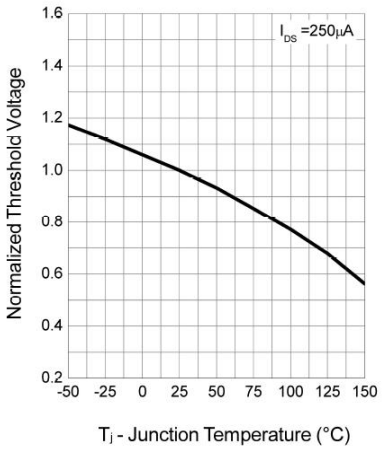


● TYPICAL CHARACTERISTICS (TA=25℃ Unless otherwise noted)

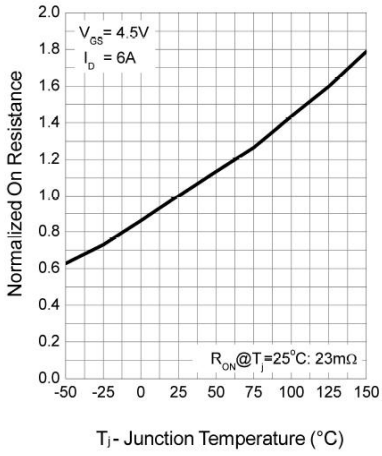
Transfer Characteristics



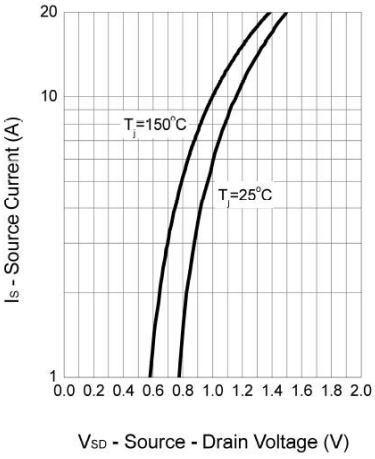
Gate Threshold Voltage



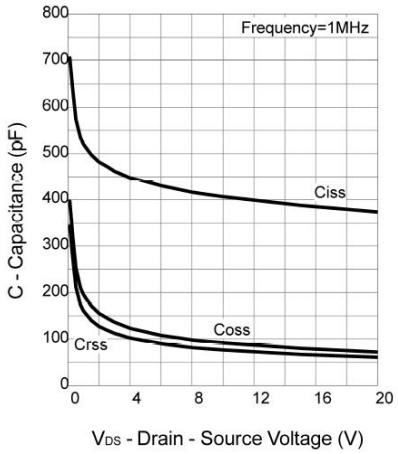
Drain-Source On Resistance



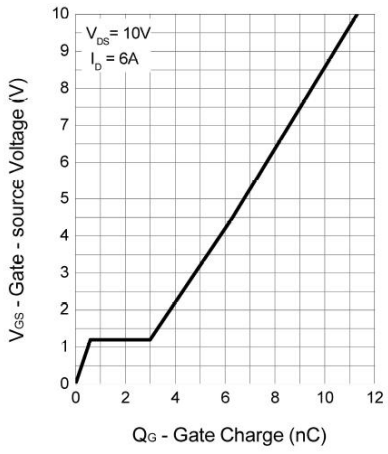
Source-Drain Diode Forward



Capacitance



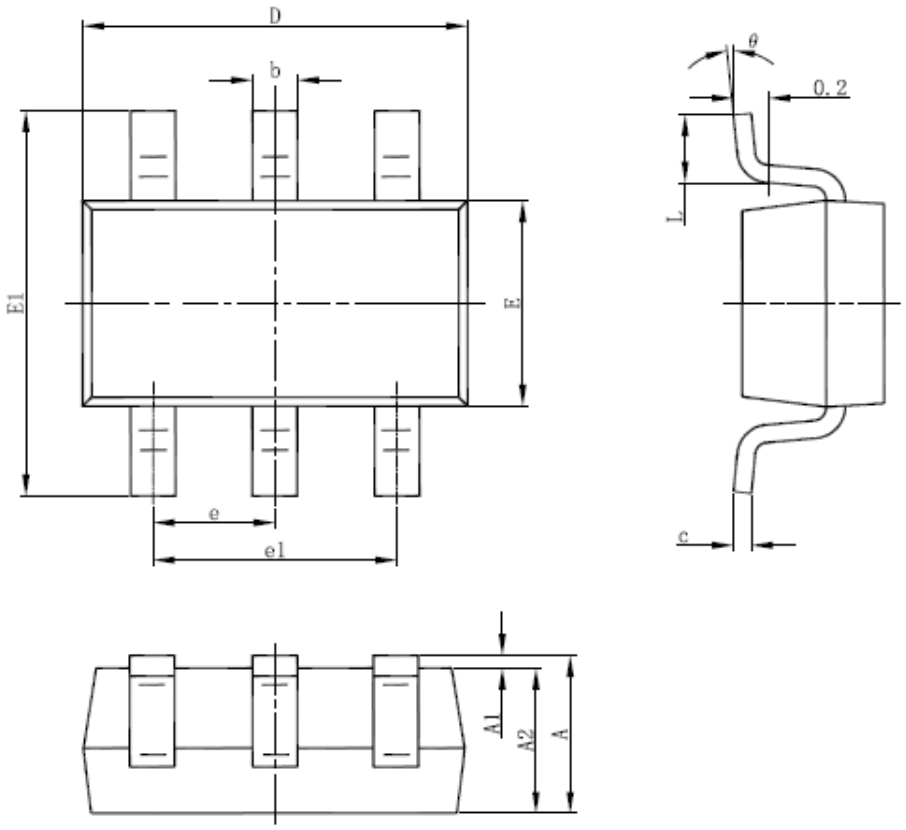
Gate Charge



● ORDERING INFORMATION

Part Number	Package code	Shipping
VIC8205DL	DL: SOT23-6	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°