

TO-92 Plastic-Encapsulate MOSFETS

CJV01N65B

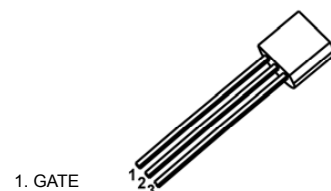
N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
650 V	14Ω@ 10V	1A

GENERAL DESCRIPTION

This advanced high voltage MOSFET is designed to stand high energy in the avalanche mode and switch efficiently. This new high energy device also offers a drain-to-source diode fast recovery time. Designed for high voltage, high speed switching applications such as power supplies, converters, power motor controls and bridge circuits.

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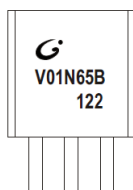


1. GATE
2. DRAIN
3. SOURCE

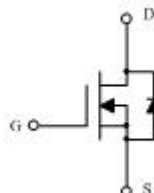
FEATURE

- High Current Rating
- Lower $R_{DS(on)}$
- Lower Capacitance
- Lower Total Gate Charge
- Tighter V_{SD} Specifications
- Avalanche Energy Specified

MARKING



Equivalent Circuit



Maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	650	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	1	A
Pulsed Drain Current	I_{DM}	4	
Single Pulsed Avalanche Energy (note1)	E_{AS}	5	mJ
Power Dissipation	P_D	625	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	200	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	°C
Maximum lead temperature for soldering purposes , 1/8" from case for 5 seconds	T_L	260	

MOSFET ELECTRICAL CHARACTERISTICS

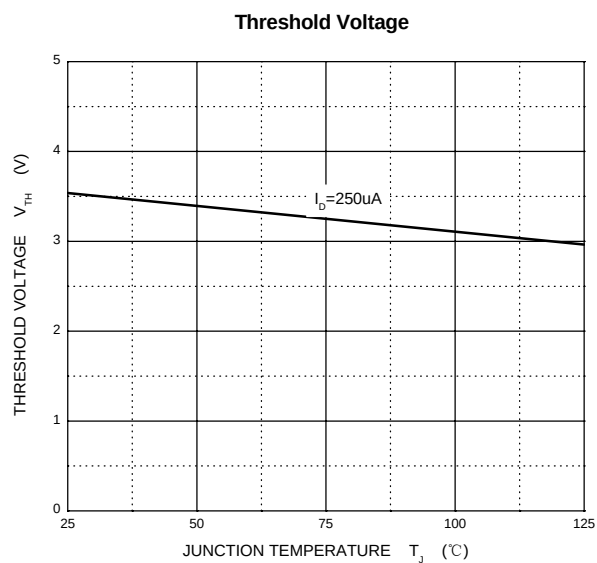
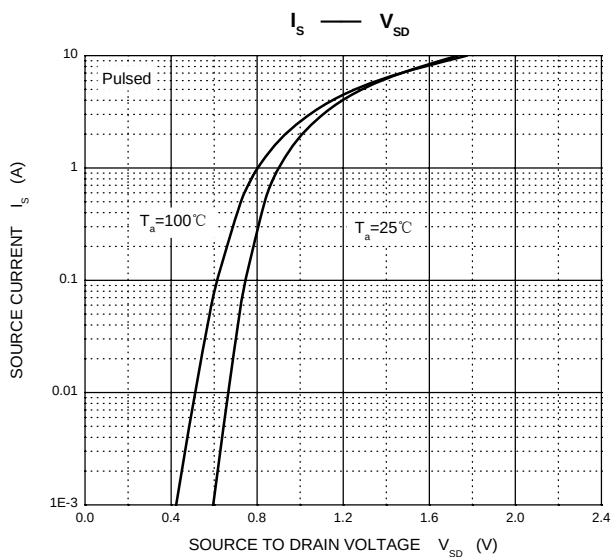
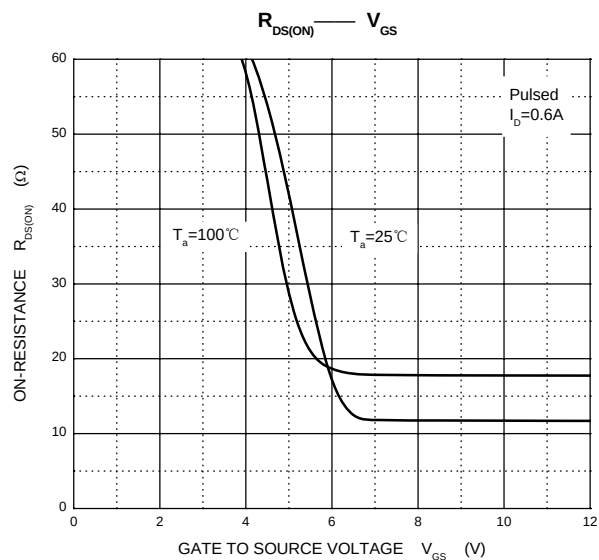
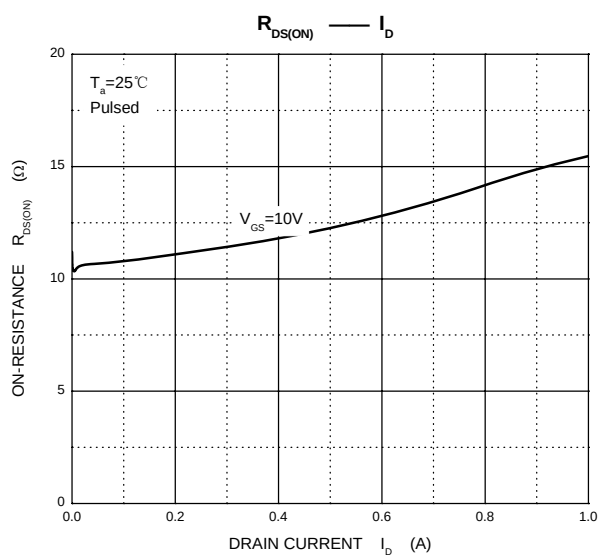
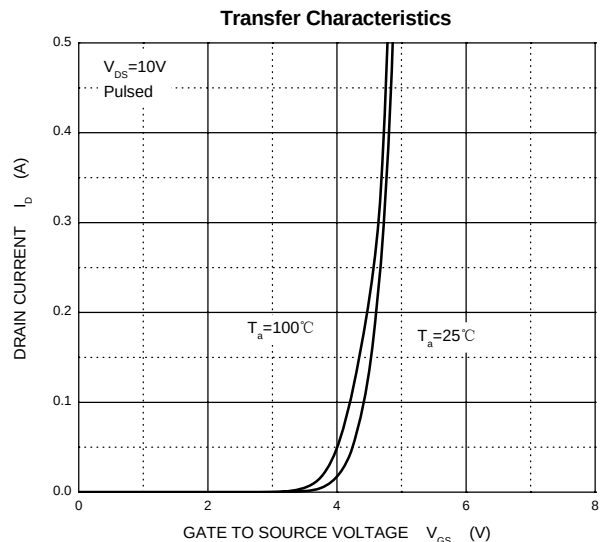
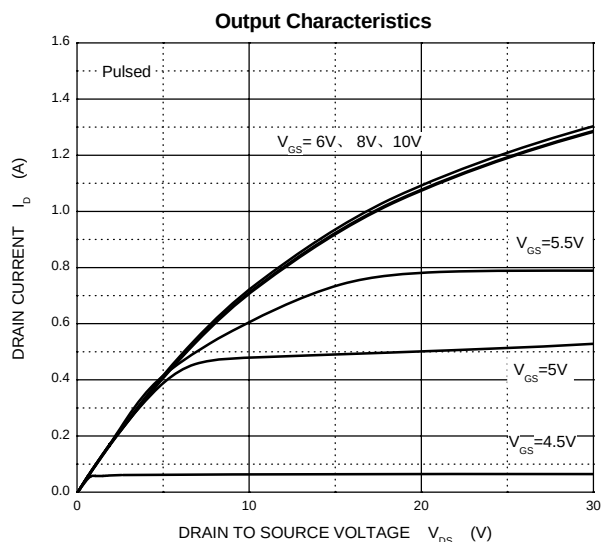
$T_a=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	650			V
Drain-source diode forward voltage(note2)	V _{SD}	V _{GS} = 0V, I _S =1A			1.5	
Zero gate voltage drain current	I _{DSS}	V _{DS} =600V, V _{GS} =0V			100	μA
Gate-body leakage curren (note2)	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
On characteristics (note2)						
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.0		4.0	V
Static drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =0.6A			14	Ω
Dynamic characteristics (note 3)						
Input capacitance	C _{iss}	V _{DS} =25V,V _{GS} =0V,f =1MHz		210		pF
Output capacitance	C _{oss}			28		
Reverse transfer capacitance	C _{rss}			4.2		
Switching characteristics (note 3)						
Total gate charge	Q _g	V _{DS} =480V,V _{GS} =10V,I _D =4.0A		5.0	10	nC
Gate-source charge	Q _{gs}			2.7		
Gate-drain charge	Q _{gd}			2.0		
Turn-on delay time (note3)	t _{d(on)}	V _{DD} =300V, V _{GS} =10V, R _G =18Ω, I _D =1A		8		ns
Turn-on rise time (note3)	t _r			21		
Turn-off delay time (note3)	t _{d(off)}			18		
Turn-off fall time (note3)	t _f			24		

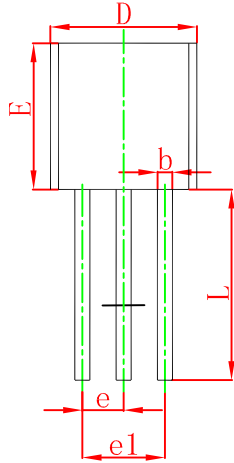
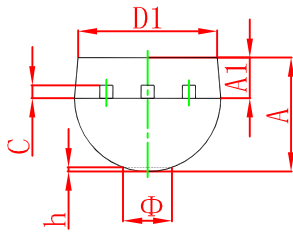
Notes :

1. $L=10mH, I_L=1A, V_{DD}=50V, V_{GS}=10V, R_G=25\Omega$, Starting $T_J=25^{\circ}\text{C}$.
2. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
3. These parameters have no way to verify.

Typical Characteristics

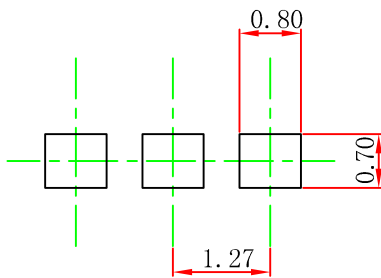


TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

TO-92 Suggested Pad Layout



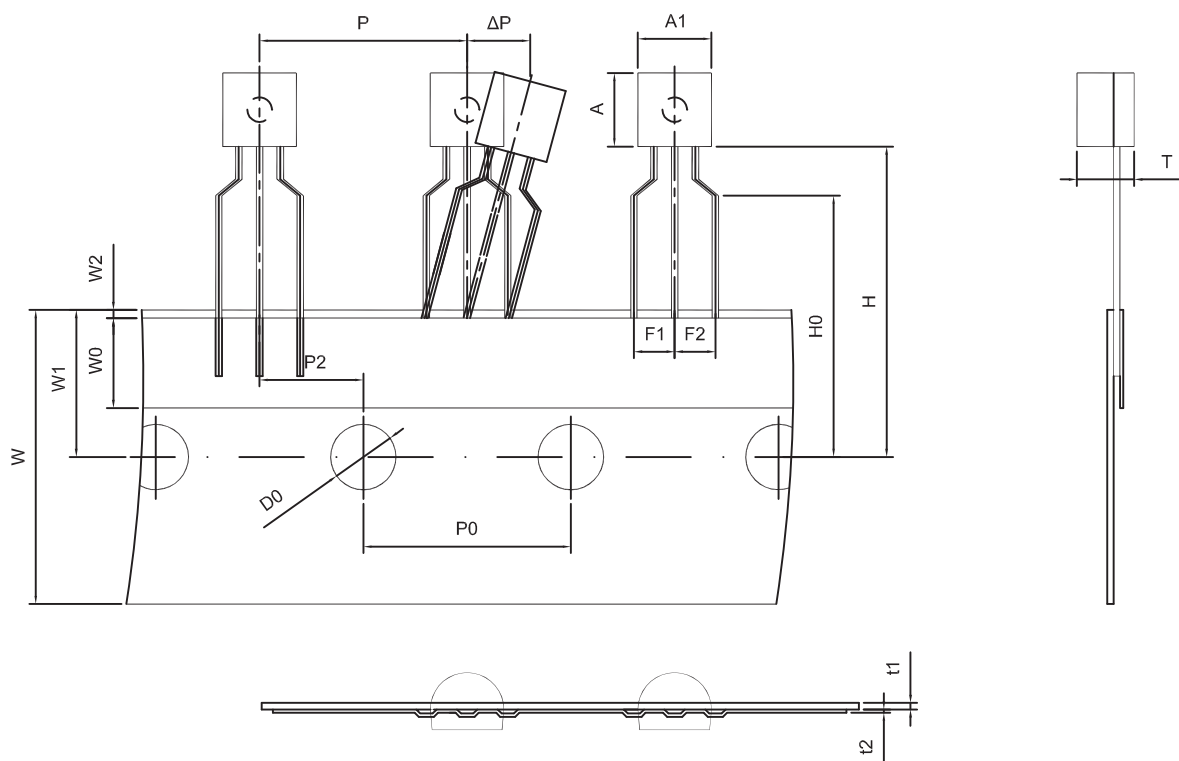
Note:

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

NOTICE

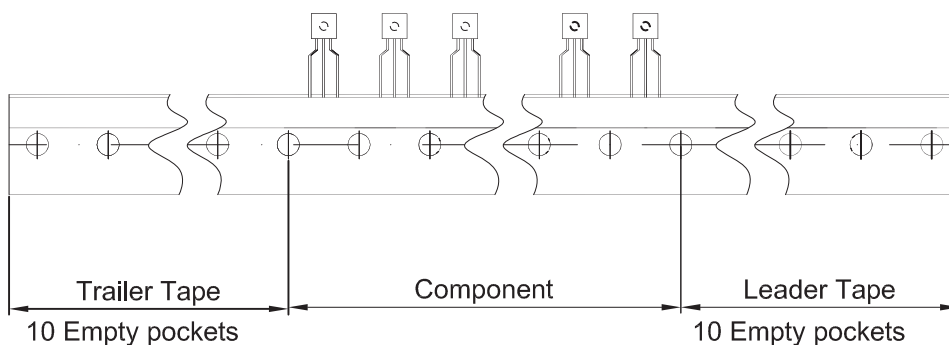
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TO-92 PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
4.5	4.5	3.5	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0 MAX.	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250