

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
650V	$2.47\Omega@10V$	4A

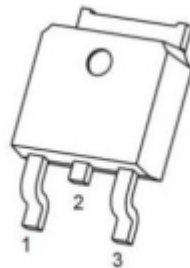
Feature

- Fast Switching
- Low Gate Charge and $R_{DS(on)}$
- 100% Single Pulse avalanche energy Test

Application

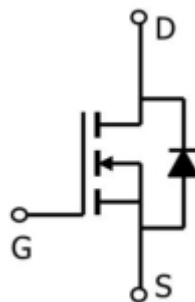
- DC-DC Converter
- Ideal for high-frequency switching and synchronous rectification

Package

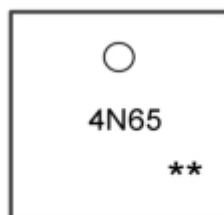


TO-252-2L(G:1 D:2 S:3)

Circuit diagram



Marking



4N65
**

=Device Code
=Week Code

Absolute maximum ratings

(T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	650	V
Gate-Source Voltage	V _{GS}	±30	V
Continuous Drain Current ¹ (T _C =25°C)	I _D	4	A
Pulsed Drain Current ²	I _{DM}	16	A
Single Pulse Avalanche Energy ³	E _{AS}	163	mJ
Total Power Dissipation(T _C =25°C)	P _D	77	W
Thermal Resistance Junction-Case ¹	R _{θJC}	1.62	°C/ W
Storage Temperature Range	T _{STG}	-55~ +150	°C
Operating Junction Temperature Range	T _J	-55~ +150	°C

Electrical characteristics

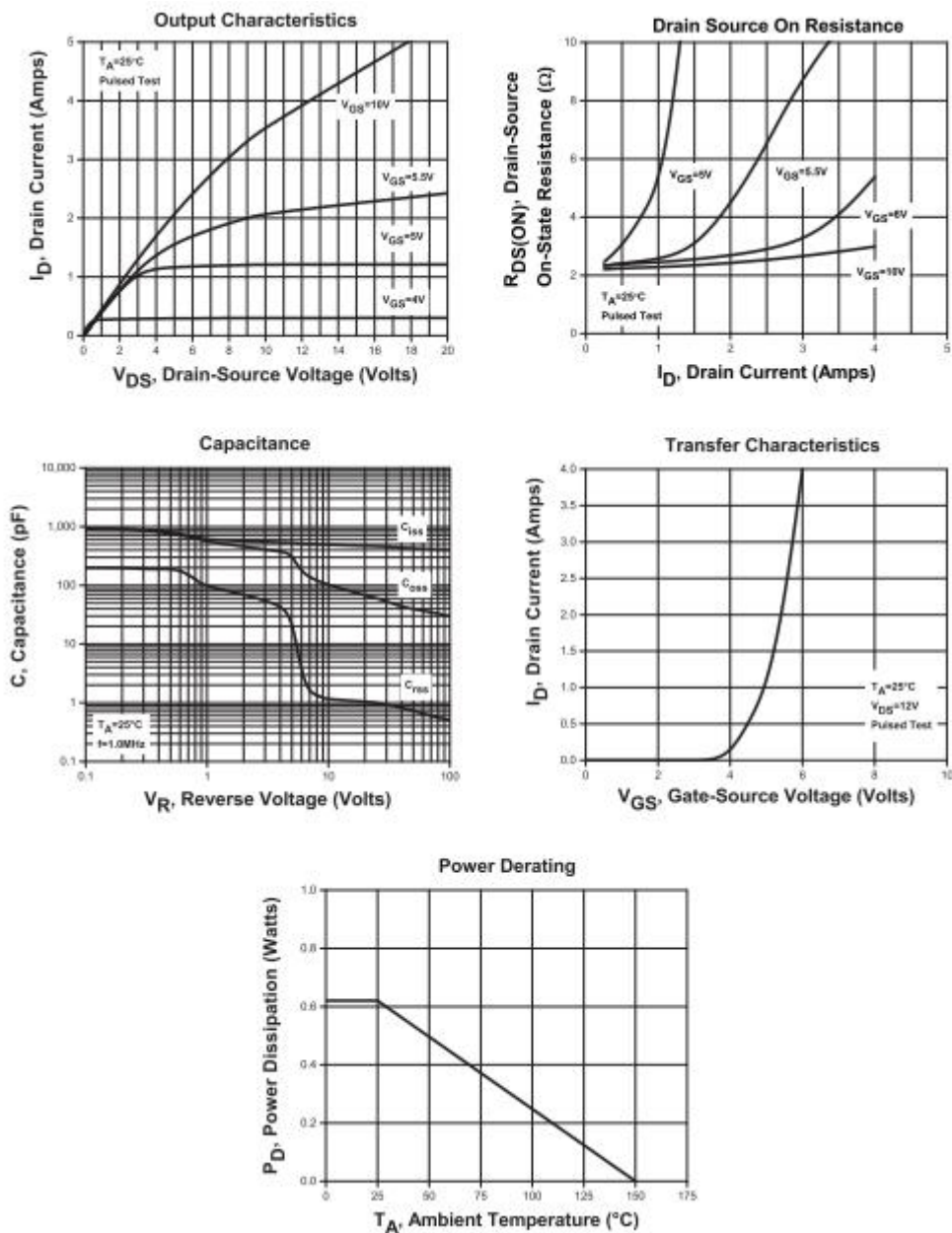
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	650			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 650V, V_{GS} = 0V$ $T_J = 25^{\circ}C$			1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 30V, V_{DS} = 0V$			± 100	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	3.2	4	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 2A$		2.47	3	Ω
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1MHz$		460		pF
Output Capacitance	C_{oss}			63		
Reverse Transfer Capacitance	C_{rss}			1.2		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 520V, V_{GS} = 10V,$ $I_D = 4A$		11		nC
Gate-Source Charge	Q_{gs}			3		
Gate-Drain Charge	Q_{gd}			5		
Turn-On Delay Time	$T_{d(on)}$	$V_{DD} = 325V, V_{GS} = 10V,$ $R_G = 10\Omega, I_D = 4A$		9		nS
Rise Time	T_r			22		
Turn-Off Delay Time	$T_{d(off)}$			24		
Fall Time	T_f			21		

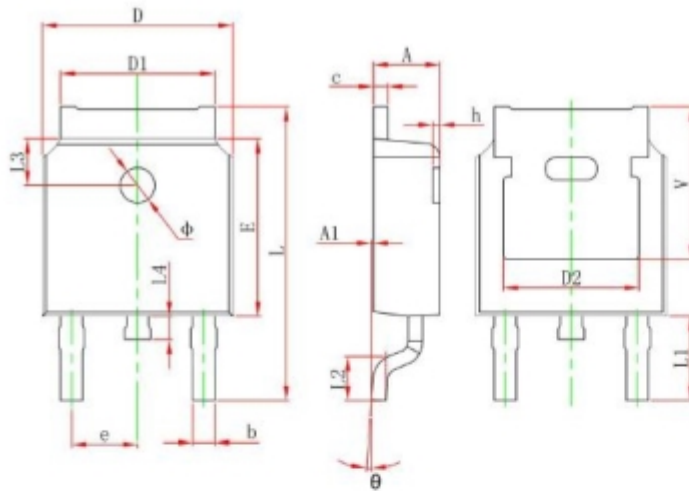
Notes:

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- 3.The EAS data shows Max. rating . The test condition is $I_D=5A, L=10mH$

Typical Characteristics



TO-252-2L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	