

BRD4N65

Rev.J Jan.-2026

/ Descriptions

TO-252 N MOS

N-CHANNEL MOSFET in a TO-252 Plastic Package.

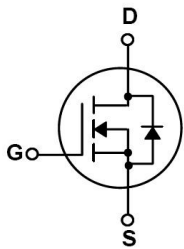
/ Features

Low gate charge, low crss, fast switching, HF Product.

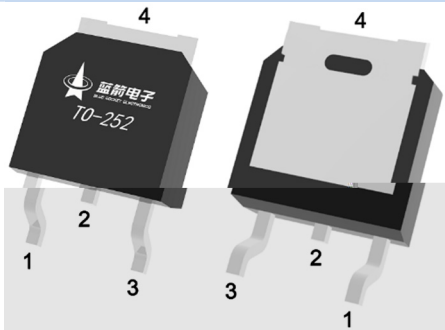
/ Applications

These devices are well suited for power switch circuit of adaptor and charger.

/ Equivalent Circuit



/ Pinning



PIN1 G

PIN 2 D

PIN 3 S

PIN 4 D

/ Marking

See Marking Instructions.

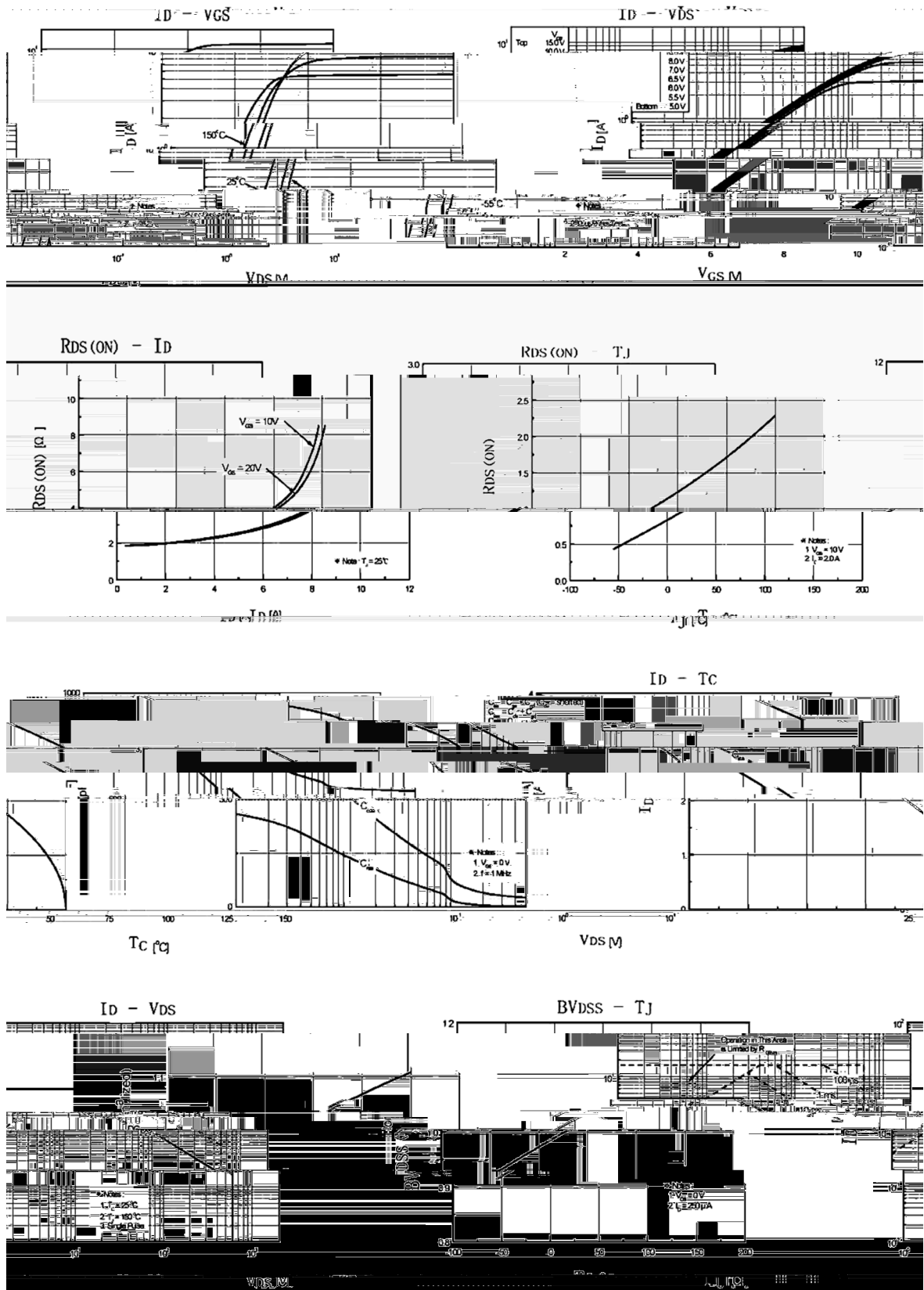
/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	650	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	4.0	A
Drain Current	$I_D(T_c=100^\circ\text{C})$	3.2	A
Drain Current - Pulsed	I_{DM}	16	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	150	mJ
Repetitive Avalanche Energy	E_{AR}	30	mJ
Avalanche Current	I_{AR}	2.5	A
Power Dissipation	$P_D(T_c=25^\circ\text{C})$	75	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	
Junction to Ambient	$R_{\theta JA}$	100	/W
Junction to Case	$R_{\theta JC}$	1.7	/W

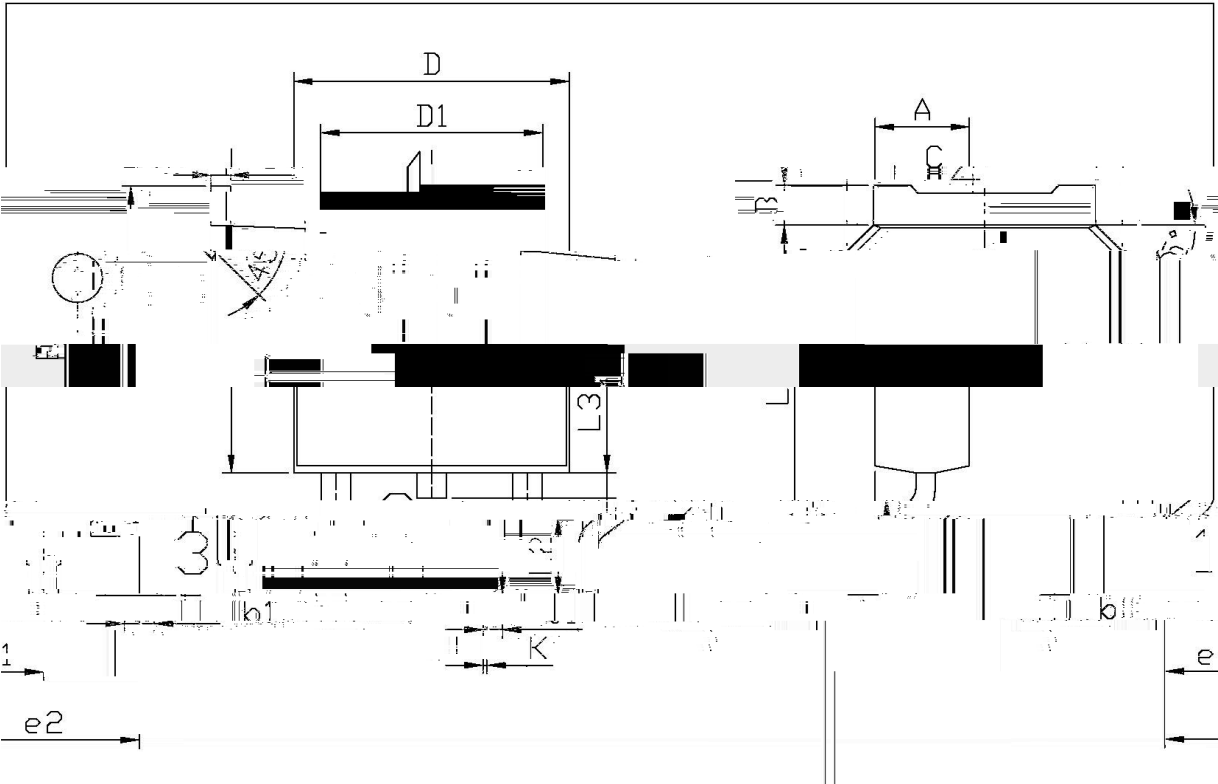
/ Electrical Characteristics($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250\mu A$	650			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V$ $V_{GS}=0V$			1	μA
		$V_{DS}=520V$ $T_c=125^\circ\text{C}$			100	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.0		4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=2.0A$		2.4	2.7	Ω
Forward Transconductance	g_{FS}	$V_{DS}=15V$ $I_D=2.0A$		3.5		S
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=4.0A$			1.5	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		560		pF
Output Capacitance	C_{oss}			50		pF
Reverse Transfer Capacitance	C_{rss}			2.2		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=325V$ $I_D=4.0A$ $R_G=10\Omega$		14		ns
Turn-On Rise Time	t_r			22		ns
Turn-Off Delay Time	$t_{d(off)}$			29		ns
Turn-Off Fall Time	t_f			15		ns

/ Electrical Characteristic Curve



/ Package Dimensions

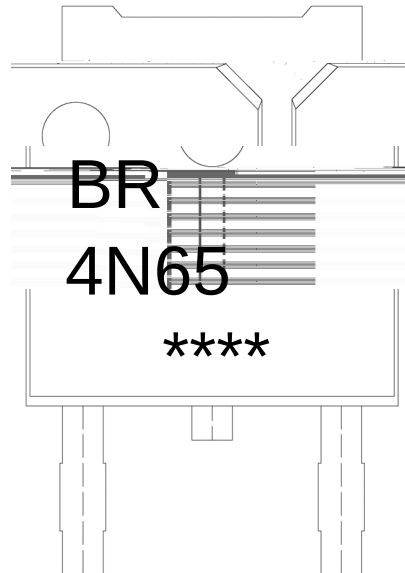


单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
F	5.05	6.25	A	5.20	2.40
B	0.95	1.25	e1	2.24	2.34
b1	0.70	0.80	e2	4.13	4.73
b1	0.45	0.55	L1	9.85	10.35
C	0.45	0.55	L2	1.70	2.00
D	6.45	6.75	L3	0.60	0.90
e	5.10	5.50	K		

T0-252

/ Marking Instructions



BR

4N65

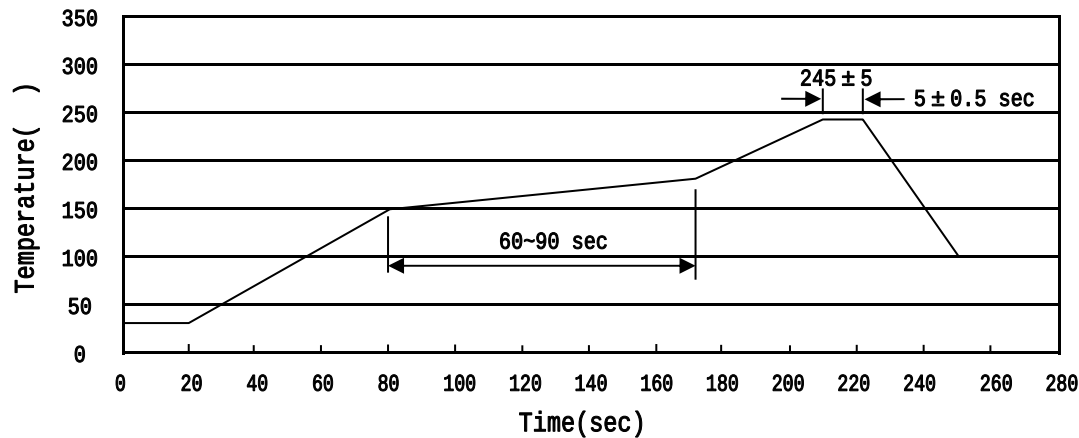
Note:

BR: Company Code

4N65: Product Type Code

****: Lot No. Code, code change with Lot No.

() / **Temperature Profile for IR Reflow Soldering(Pb-Free)**



Note:

- | | | | | | |
|---|-------|-----|-----------|--------|---|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180 °C, Time:60~90sec. |
| 2 | 245±5 | | 5±0.5sec; | | 2.Peak Temp.:245±5 °C, Duration:5±0.5sec. |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 °C/sec. |

/ **Resistance to Soldering Heat Test Conditions**

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ **Packaging SPEC.**

/ **REEL**

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
TO-252	2,500	2	5,000	6	30,000	13 ×16	360×360×50	380×335×366

/ **TUBE**

Package Type	Units					Dimension (unit mm ³)		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ **Notices**

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