

BRD4N65

Rev.J Jan.-2026

/ Descriptions

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

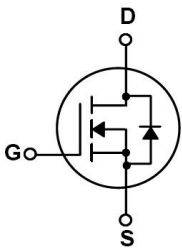
/ Features

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

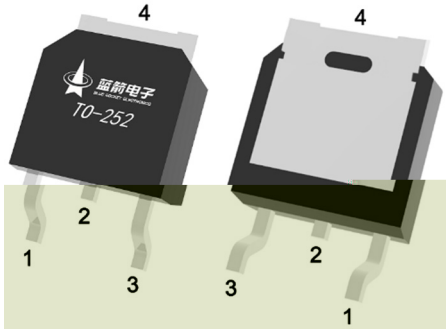
/ Applications

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.

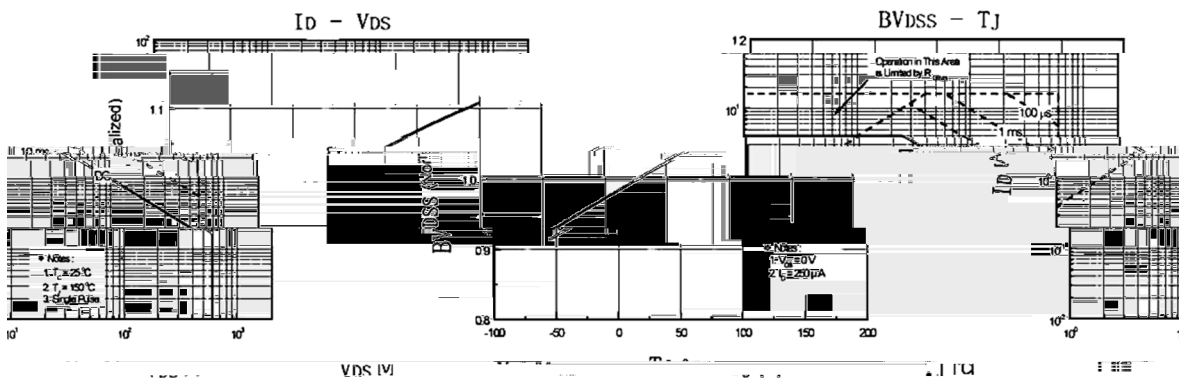
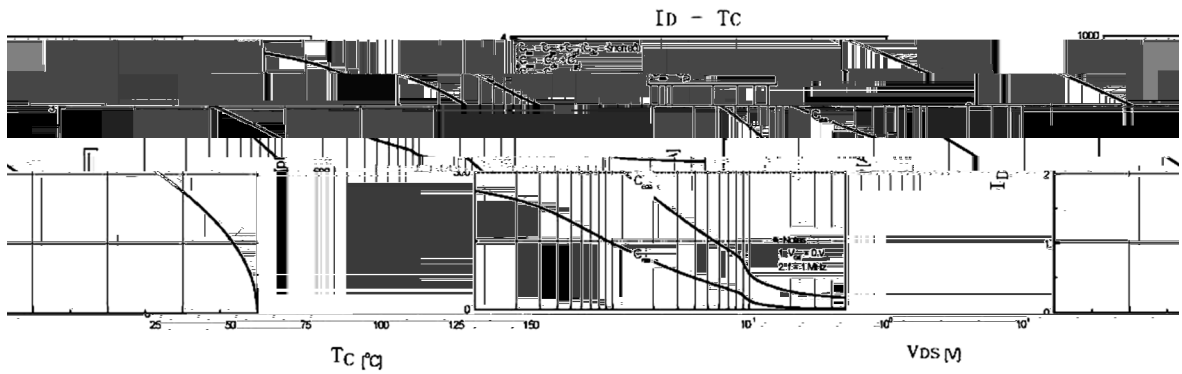
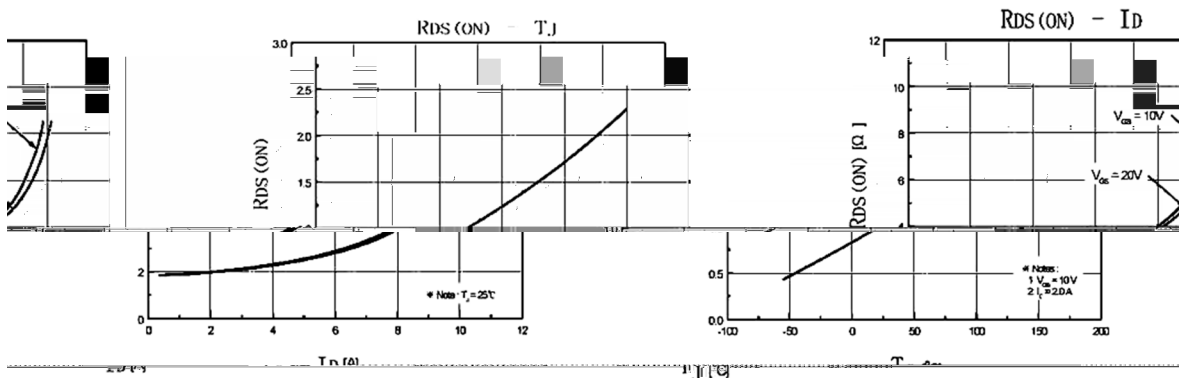
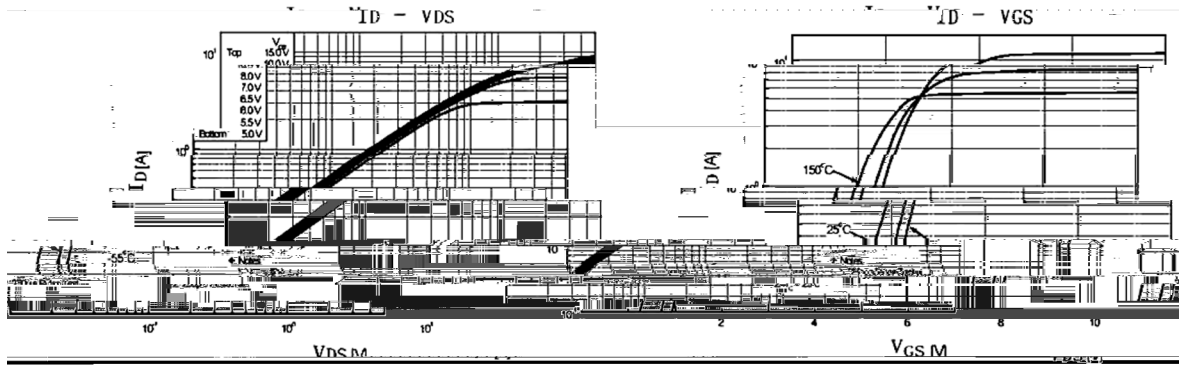
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	650	V
Drain Current	$I_D(T_C=25)$	4.0	A
Drain Current	$I_D(T_C=100)$	3.2	A
Drain Current - Pulsed	I_{DM}	16	A
Gate-Source Voltage	V_{GSS}	± 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	$P_D(T_C=25)$	75	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	
Junction to Ambient	R_{JA}	100	$^{\circ}C/W$
Junction to Case	R_{JC}	1.7	$^{\circ}C/W$

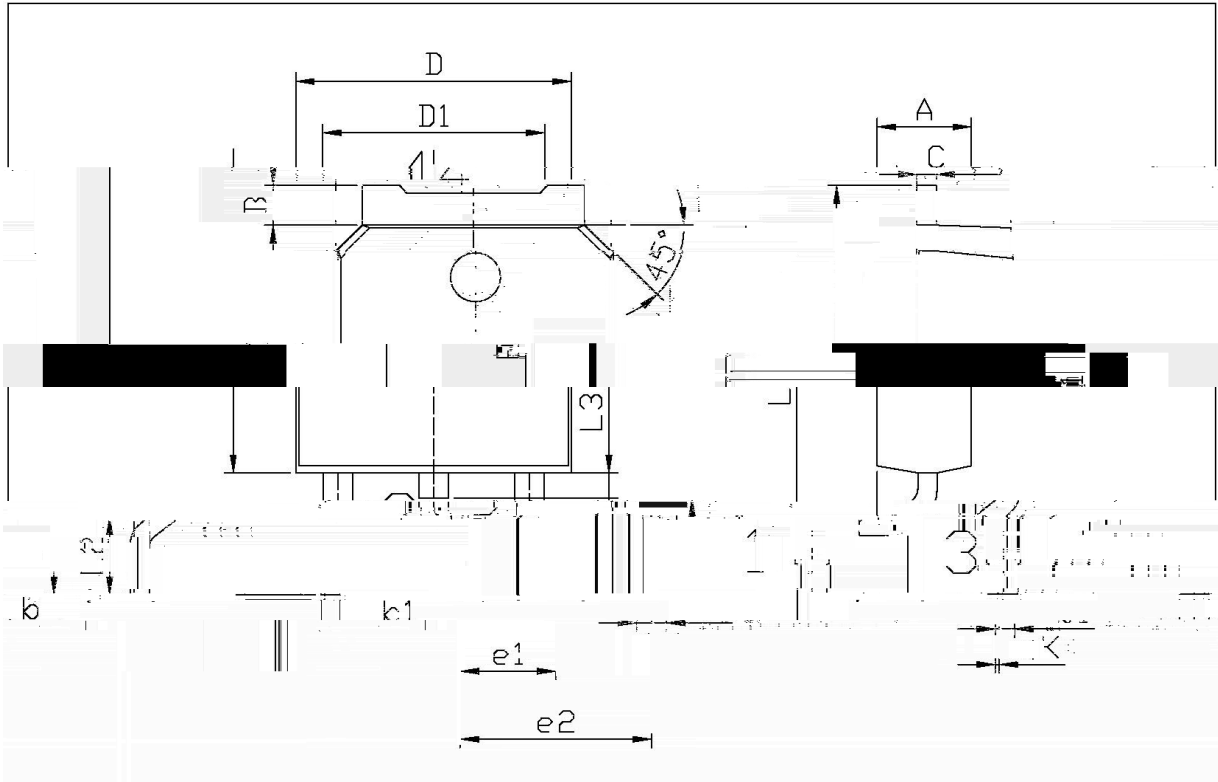
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250$ A	650			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V$ $V_{GS}=0V$			1	A
		$V_{DS}=520V$ $T_C=125$			100	A
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250$ 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	
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	$t_{d(on)}$		$V_{DD}=325V$ $I_D=4.0A$ $R_G=10$		14	
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



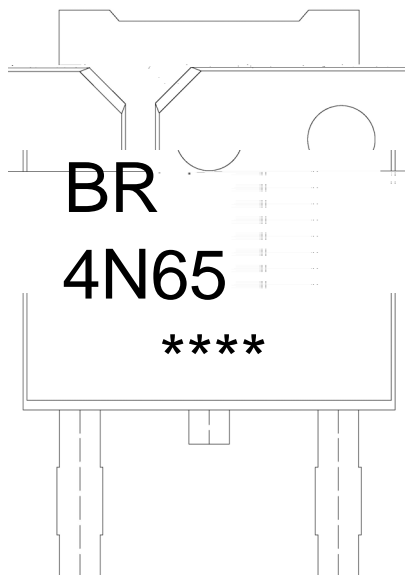
单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min.	Max.		Min.	Max.
A	2.20	2.40	E	5.90	6.10
B	0.95	1.25	e1	2.20	2.40
C	1.70	2.00	e2	9.85	10.35
D	6.45	6.75	L3	0.60	0.90
D1	5.10	5.50	b	0.70	0.85
L2	1.70	2.00	b1	0.45	0.55
P	6.45	6.75			
J1	5.10	5.50			

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TO-25

/ Marking Instructions



BR

4N65

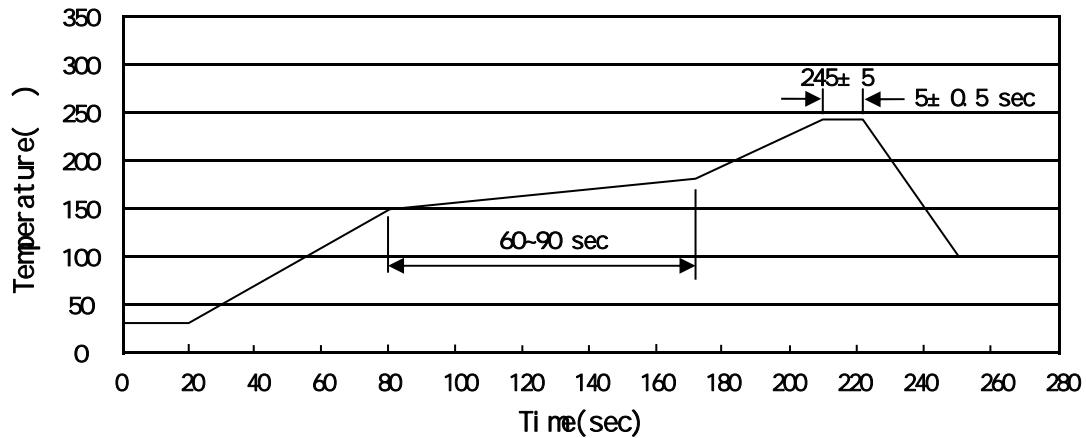
Note:

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 , Time:60~90sec. |
| 2 | 245±5 | | 5±0.5 | sec; | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 | | | 2 | 10 /sec. | 3. Cooling Speed: 2~10 /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)		
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)		
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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