

Rev.E Jul.-2023

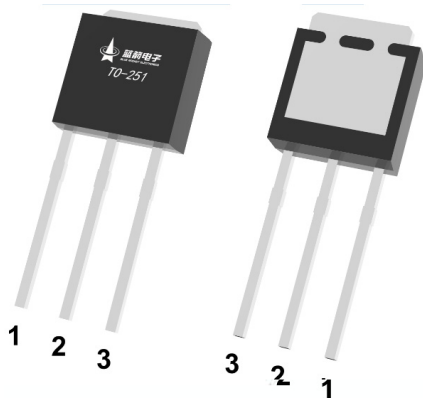
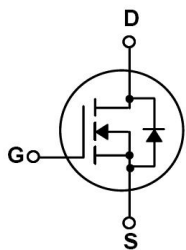
TO-251 N MOS

N-CHANNEL MOSFET in a TO-251 Plastic Package.

Low gate charge, low crss, fast switching.

DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.



PIN1 G

PIN 2 D

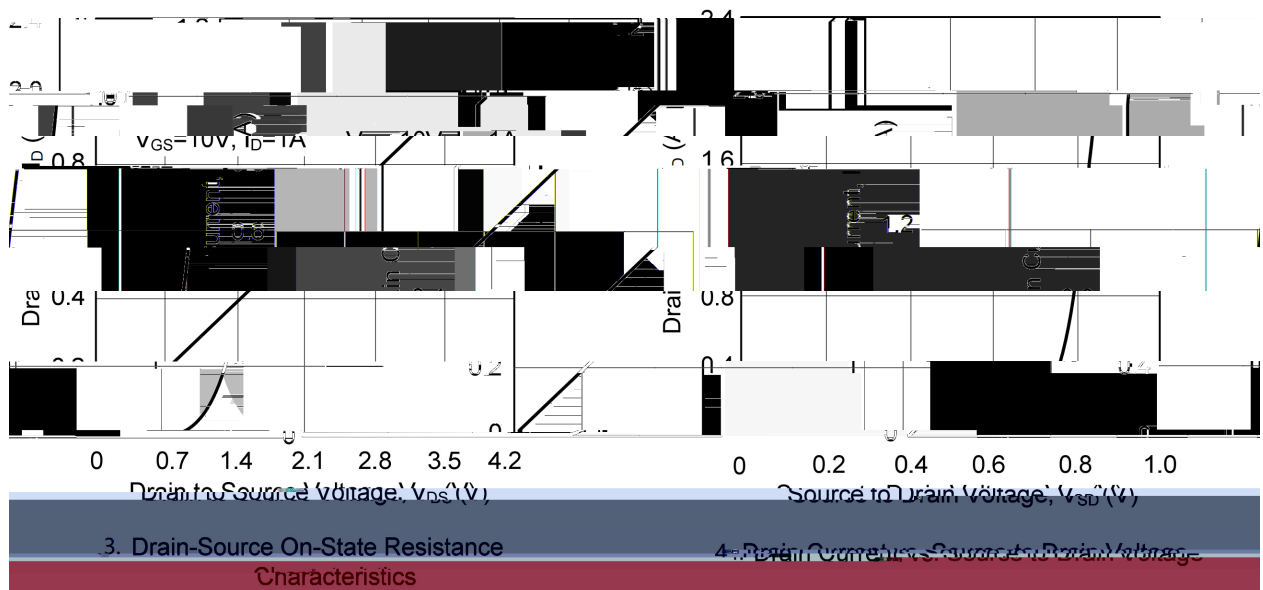
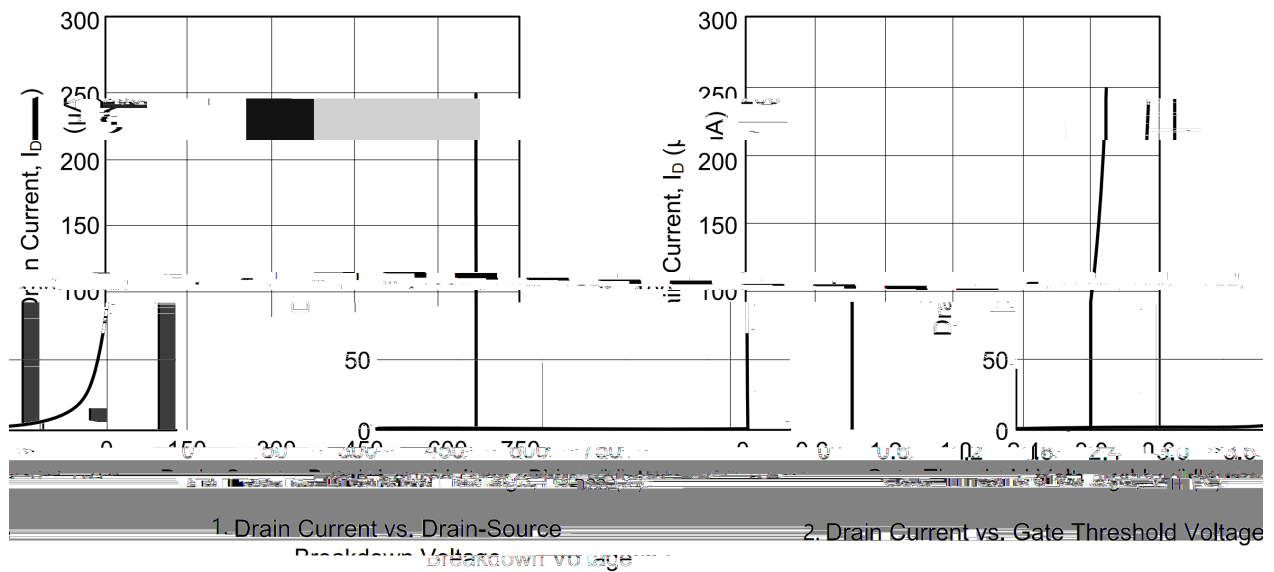
PIN 3 S

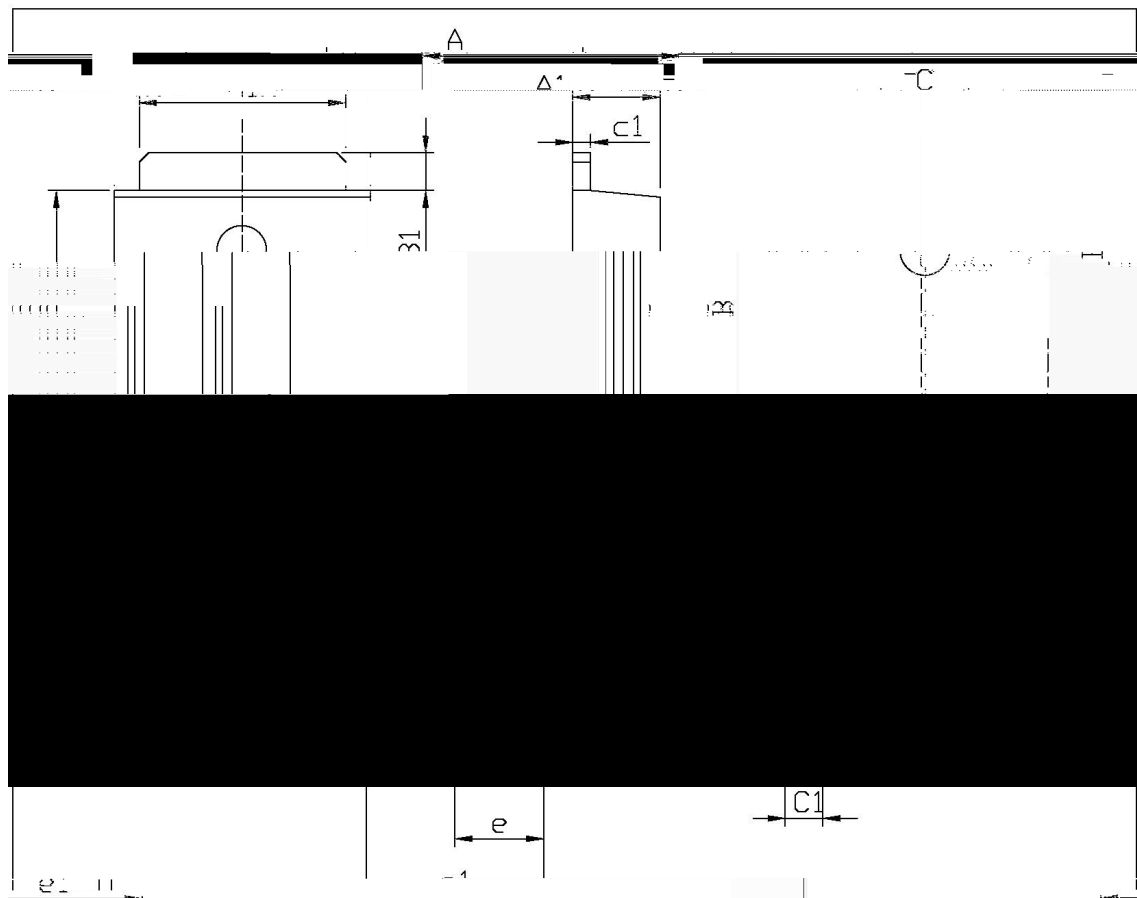
See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	650	V
Drain Current	$I_D(T_C=25^\circ\text{C})$	2.0	A
Drain Current	$I_D(T_C=100^\circ\text{C})$	1.3	A
Drain Current - Pulsed	I_{DM}	8	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	120	mJ
Repetitive Avalanche Energy	E_{AR}	5.4	mJ
Avalanche Current	I_{AR}	2.0	A
Power Dissipation	$P_D(T_C=25^\circ\text{C})$	28	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	
Junction to Ambient	$R_{\theta JA}$	110	/W
Junction to Case	$R_{\theta JC}$	4.46	/W

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250\text{ A}$	650			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V$ $V_{GS}=0V$			1.0	A
		$V_{DS}=480V$ $T_C=125^\circ\text{C}$			100	A
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 0.1	A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\text{ A}$	2.0		4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=1.0A$		4.3	6.5	
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		325		pF
Output Capacitance	C_{oss}			30		pF
Reverse Transfer Capacitance	C_{rss}			5		pF
Total Gate Charge	Q_G	$V_{DS}=520V,$ $I_D=2.0A,$ $V_{GS}=10V$		46		nC
Gate-Source Charge	Q_{GS}			4.2		
Gate-Drain Charge	Q_{GD}			8.5		

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=325V \quad I_D=2.0A$ $R_G=25$		36		ns
Turn-On Rise Time	t_r			42		
Turn-Off Delay Time	$t_{d(off)}$			132		
Turn-Off Fall Time	t_f			41		
Maximum Continuous Drain-Source Diode Forward Current	I_S				2.0	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}				8	A
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, \quad I_S = 2.0A$			1.4	V
Reverse Recovery Time	t_{rr}	$V_{GS} = 0V, \quad I_S = 2.0A,$ $dI_F/dt = 100 A/s$		182		nS
Reverse Recovery Charge	Q_{rr}			0.8		nC

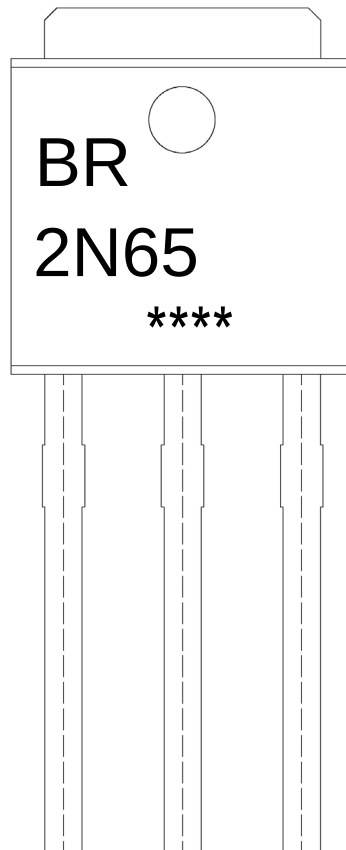




单位: mm

Figure 1: Schematic representation of the experimental design. The figure shows two parallel timelines for 'Min' and 'Max' conditions. The 'Min' timeline includes a 'Symbol' phase (0.45s), a 'Min' phase (0.35s), and a 'Max' phase (0.95s). The 'Max' timeline includes a 'Symbol' phase (0.45s), a 'Max' phase (0.35s), and a 'Min' phase (0.95s). The total duration for each condition is 1.75s. The 'Min' condition is labeled 'B' and the 'Max' condition is labeled 'C'. The 'Min' condition is further divided into 'C1' (0.95s) and 'e1' (1.15s). The 'Max' condition is further divided into 'c1' (0.45s) and '4.43' (4.73s).

TC-251



BR

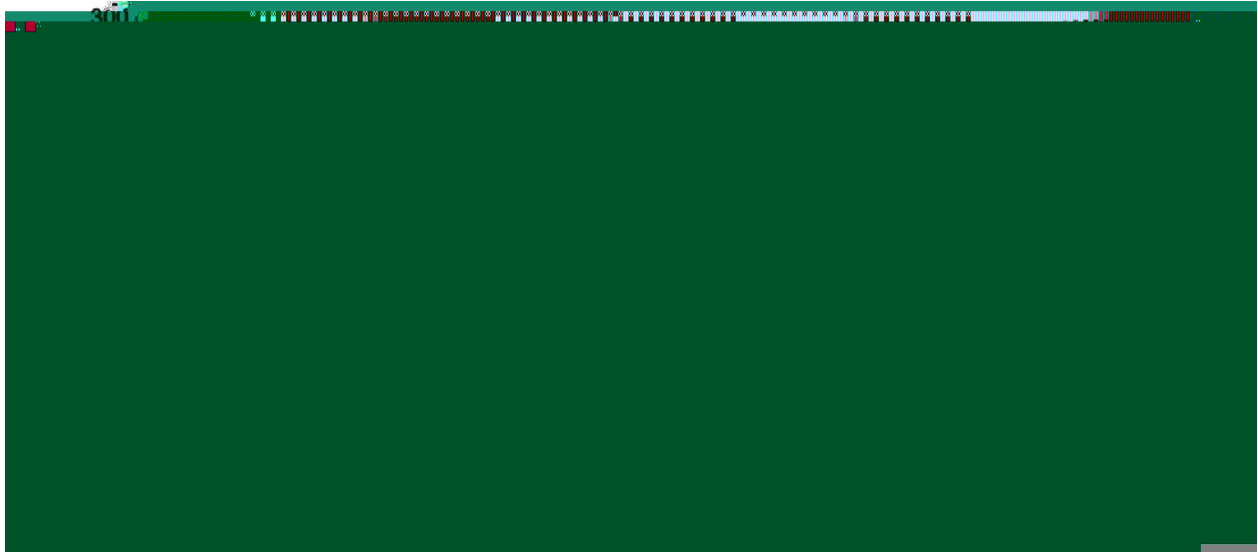
2N65

Note:

BR: Company Code

2N65: Product Type

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


Note:

- | | | | | | |
|---|-------|-----|-----------|--------|---|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 255±5 | | 5±0.5sec; | | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

270±5	10±1 sec.	Temp.:270±5	Time:10±1 sec
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/ BULK

Package Type	Units					Dimension (unit mm ³)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-251	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195

/ 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