

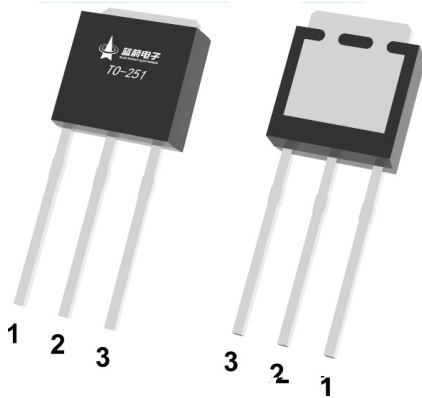
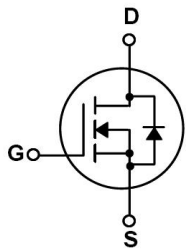
Rev.E Jul.-2023

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

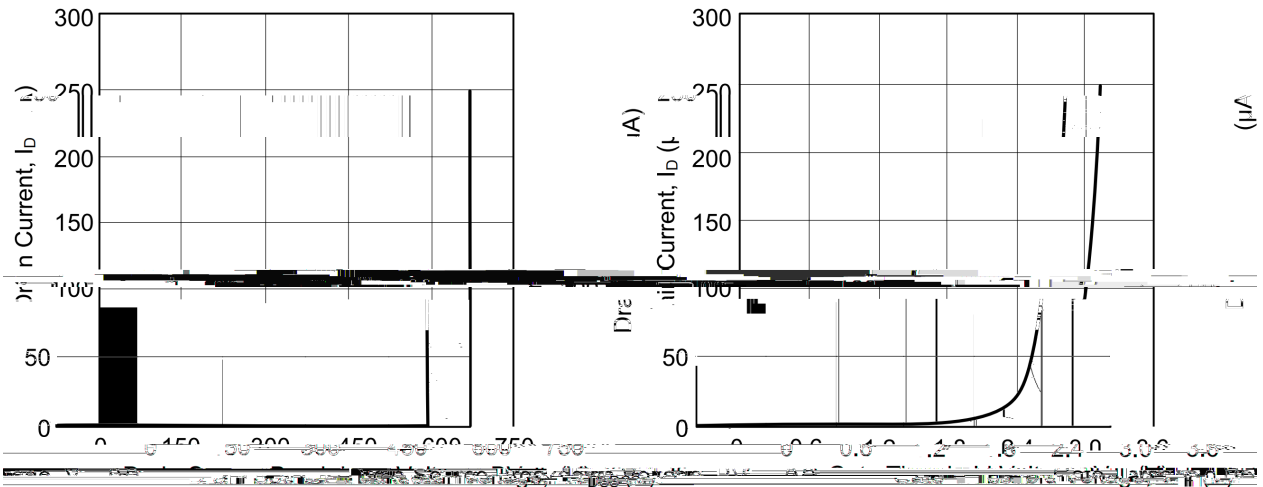
PIN 3 S

See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	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_{JA}	110	/W
Junction to Case	R_{JC}	4.46	/W

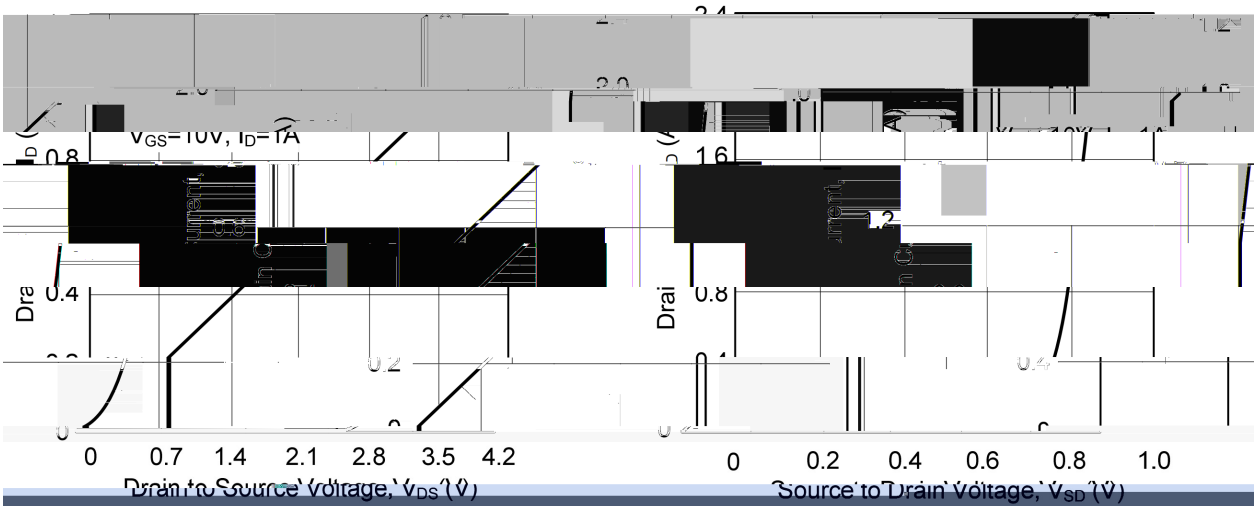
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	650			V	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V$ $V_{GS}=0V$			1.0	μA	
		$V_{DS}=480V$ $T_C=125^\circ\text{C}$			100	μA	
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 0.1	μA	
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	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=1.0A$		4.3	6.5	Ω	
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0\text{MHz}$		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	$t_{d(on)}$	$V_{DD}=325V$ $I_D=2.0A$ $R_G=25\Omega$		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}	$V_{GS} = 0V$, $I_S = 2.0A$			1.4	V
Reverse Recovery Time	t_{rr}	$V_{GS} = 0V$, $I_S = 2.0A$, $dI_F/dt = 100 A/\mu s$		182		nS
Reverse Recovery Charge	Q_{rr}			0.8		nC



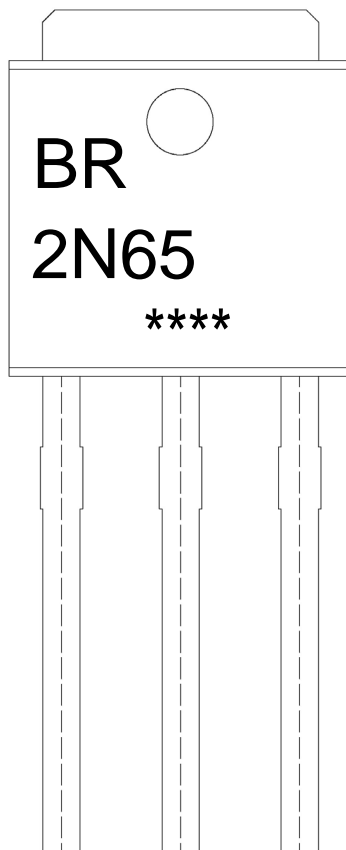
1. Drain Current vs. Drain-Source Voltage

2. Drain Current vs. Gate Threshold Voltage



3. Drain-Source On-State Resistance Characteristics

4. Drain Current vs. Source to Drain Voltage



BR

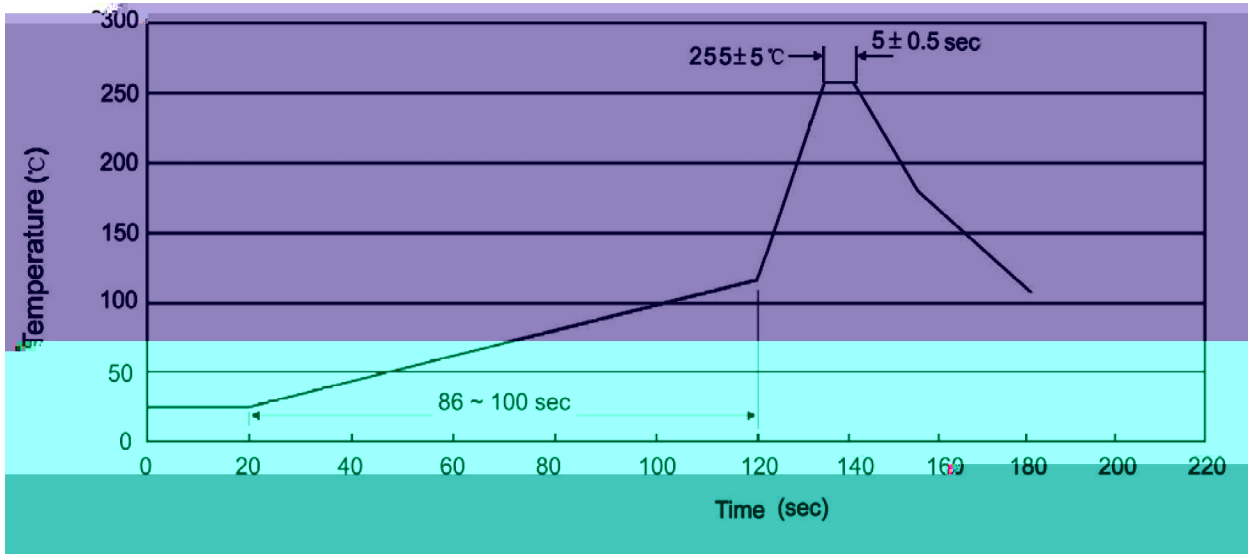
2N65

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

/ 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