

**/ Descriptions**

TO-220          N          MOS          N-CHANNEL MOSFET in a TO-220 Plastic Package.

**/ Features**

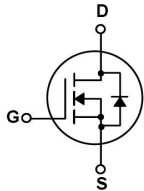
$R_{DS(on)}$            $C_{rSS}$   
Low  $R_{DS(on)}$ , low gate charge, low  $C_{rSS}$ , fast switching.

**/ Applications**

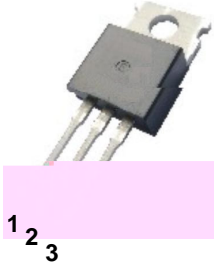
DC/DC

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.

**/ Equivalent Circuit**



**/ Pinning**



PIN1 G          PIN 2 D          PIN 3 S

**/ h<sub>FE</sub> Classifications & Marking**

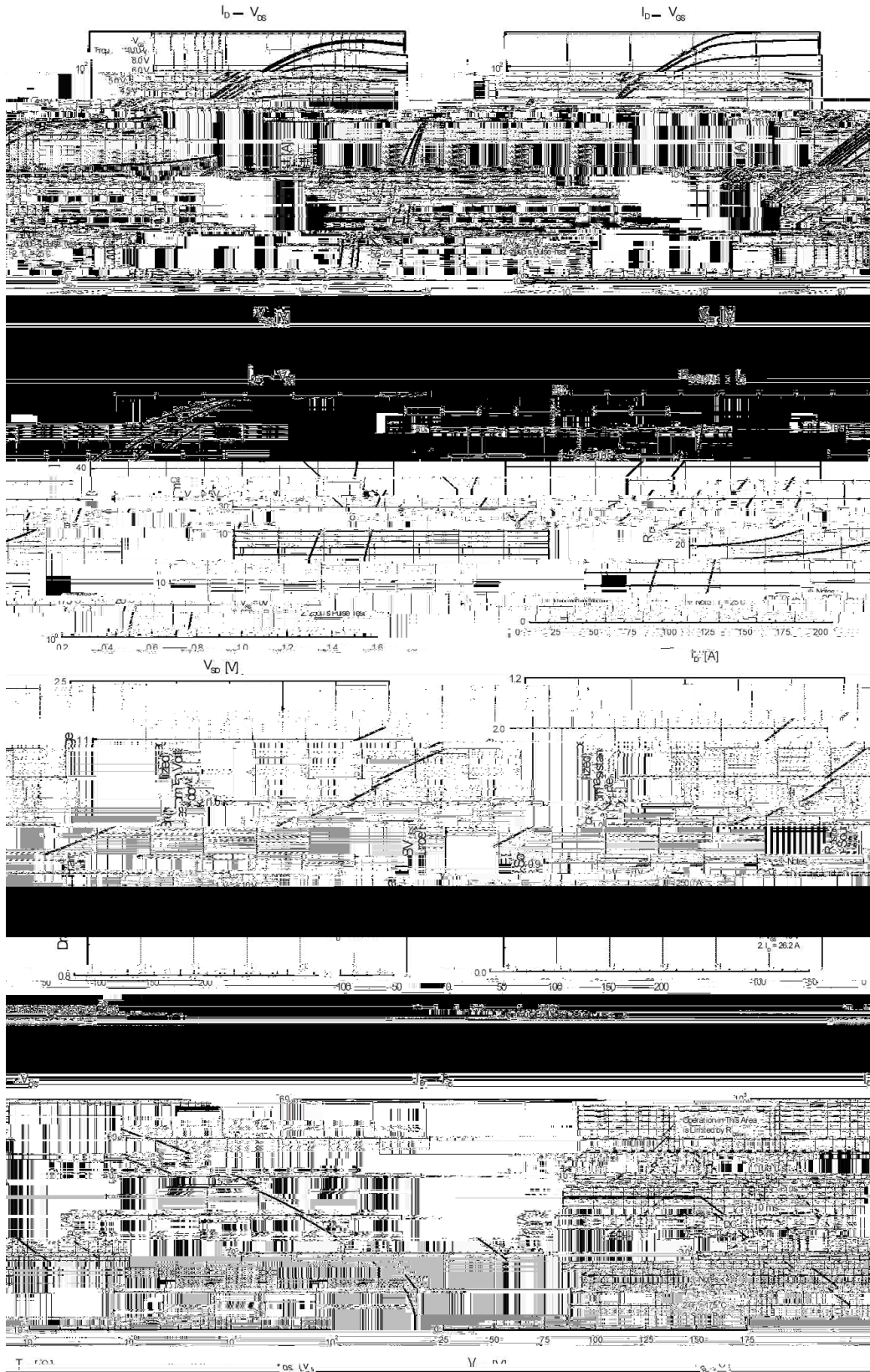
See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DSS}$	60	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	50	A
Drain Current	$I_D(T_c=100^\circ\text{C})$	35.4	A
Drain Current - Pulsed	$I_{DM}$	200	A
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Single Pulsed Avalanche Energy	$E_{AS}$	490	mJ
Avalanche Current	$E_{AR}$	12	mJ
Power Dissipation	$P_D(T_c=25^\circ\text{C})$	120	W
Operating Temperature Range	$T_j$	150	
Storage Temperature Range	$T_{stg}$	-55 150	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V$ $I_D=250\text{ A}$	60			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V$ $V_{GS}=0V$			1.0	A
		$V_{DS}=48V$ $T_C=150$			10	
Gate-Body Leakage Current, Forward	$I_{GSS}$	$V_{GS}=\pm 20V$ $V_{DS}=0V$			$\pm 0.1$	A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\text{ A}$	2		4	V
Total Gate Charge	$Q_g$	$V_{DS}=48V$ $I_D=50A$ $V_{GS}=10V$		32	42	nC
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=25A$		0.018	0.022	
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V$ $I_S=50A$			1.5	V
Input Capacitance	$C_{iss}$	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0\text{MHz}$		1050	1365	pF
Output Capacitance	$C_{oss}$			460	600	

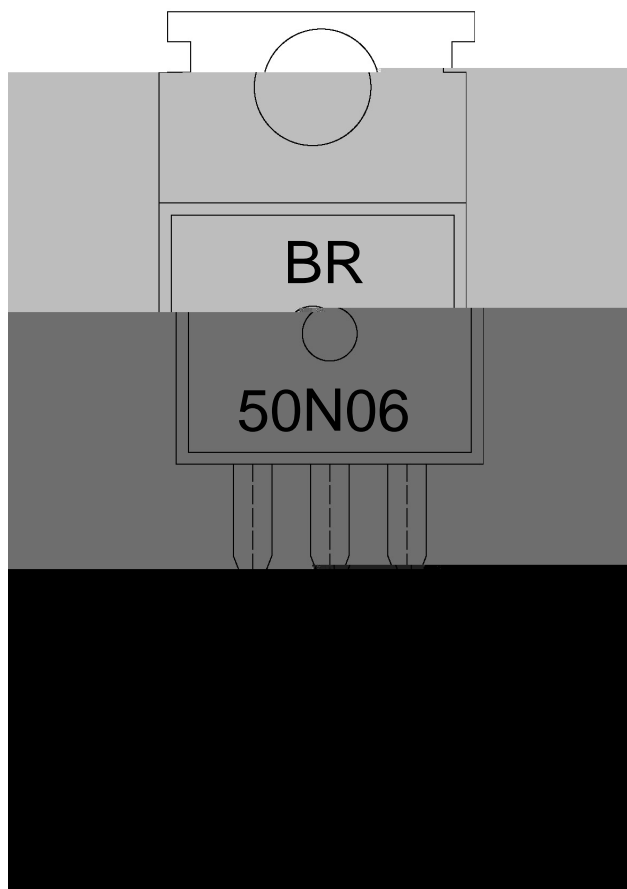
47ev64 481Q1066.76 206.9606804 22 13( )897DS

/ Electrical Characteristic Curve





/ Marking Instructions



BR

50N06

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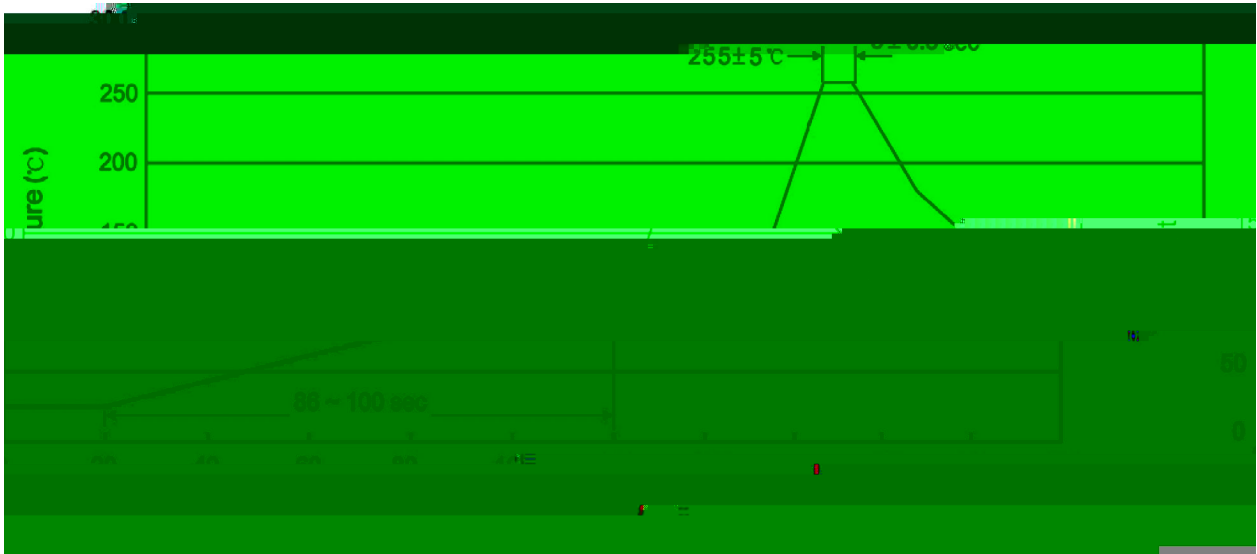
Note:

BR: Company Code

50N06: Product Type Code

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

( ) / Temperature Profile for Dip Soldering(Pb-Free)



- |   |    |     |    |                                      |   |
|---|----|-----|----|--------------------------------------|---|
| 1 | 25 | 150 | 60 | 90sec;                               | Note:<br>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.                  |

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.

/ BULK

Package Type	Units				Dimension			(unit mm <sup>3</sup> )