

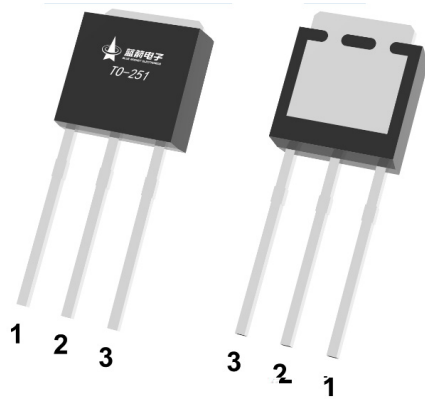
TO-251

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

 $V_{DS} (V) = -60V \quad I_D = -20A (V_{GS} = \pm 20V)$
 $R_{DS(ON)} @ -10V \leq$

◦ HF Product.

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


 φ D


PIN1 G

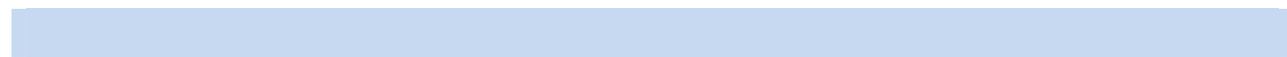
PIN 2 D

PIN 3 S

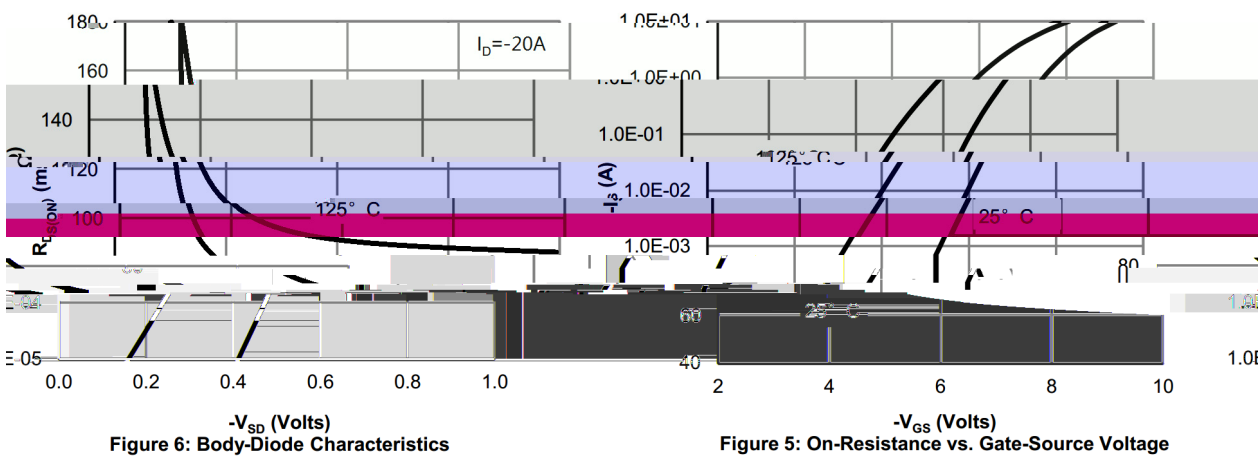
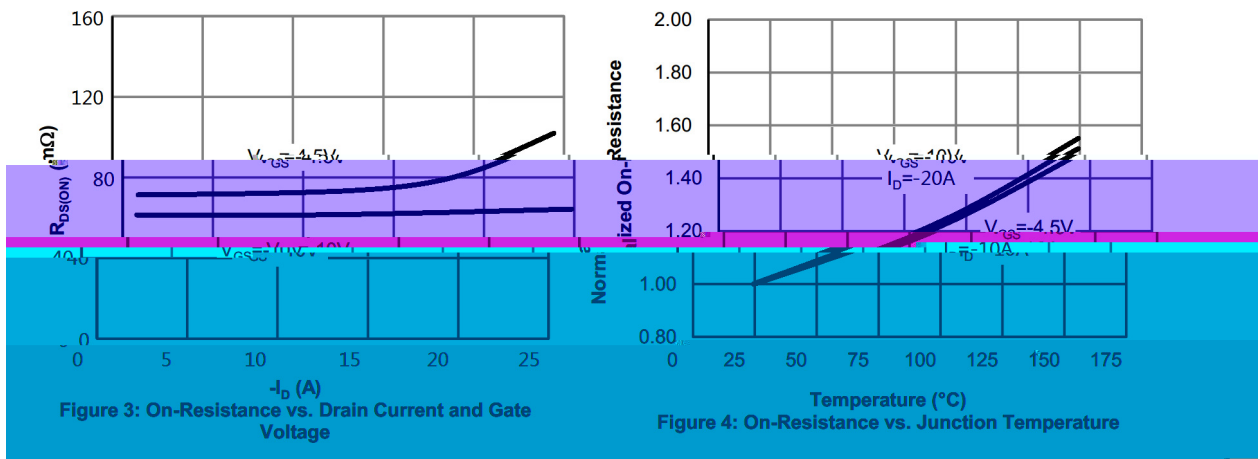
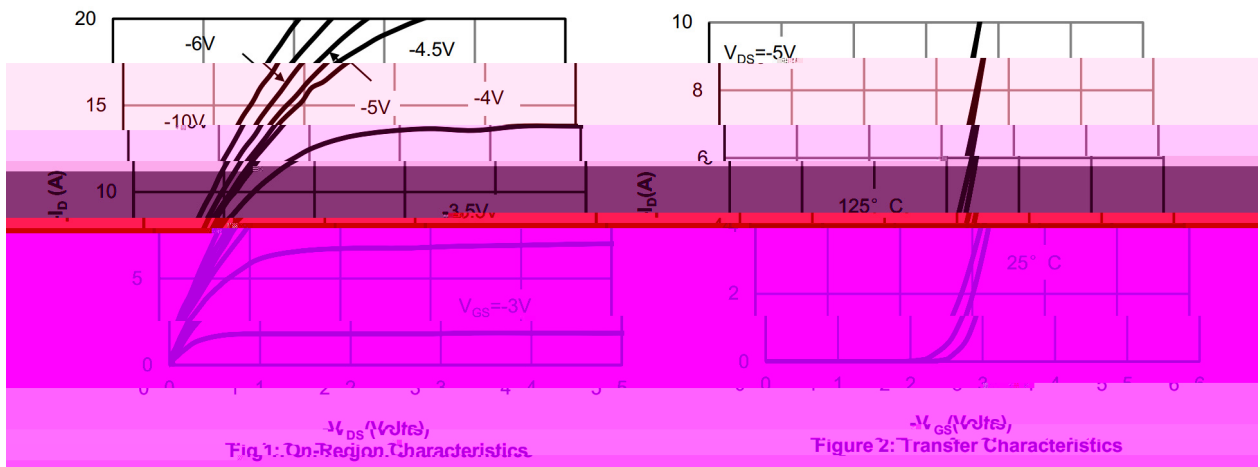
See Marking Instructions.

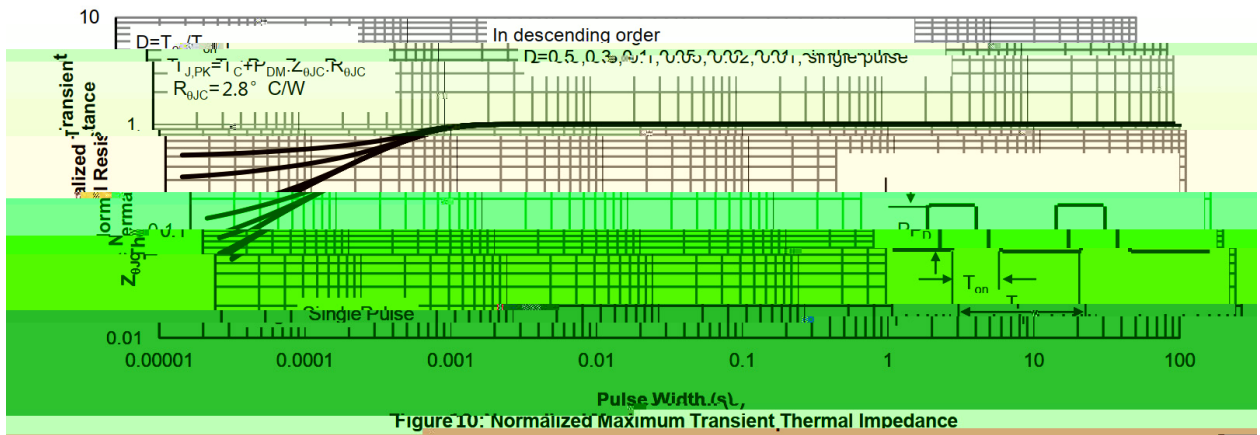
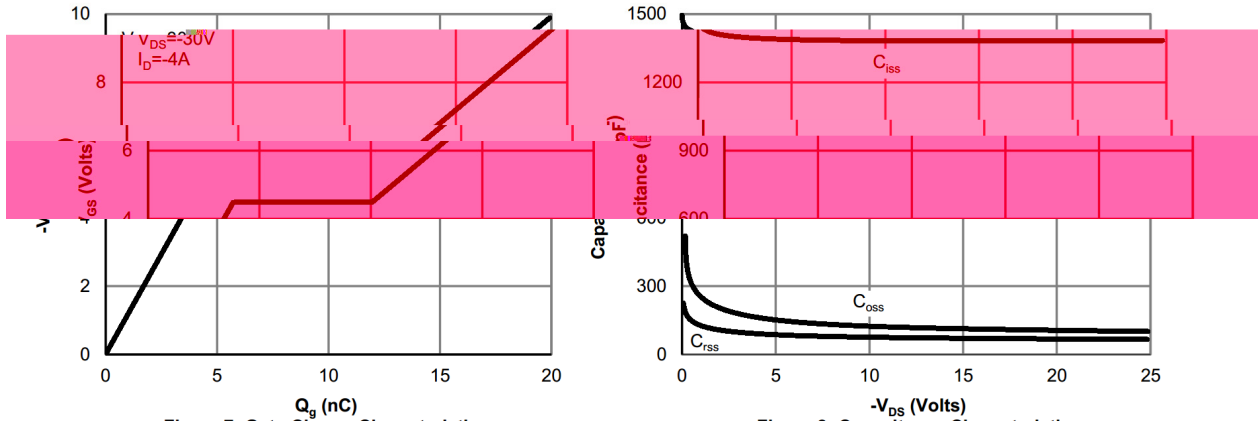
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	$I_D (T_c=25^\circ\text{C})$	-20	A
Pulsed Drain Current	I_{DM}	-80	A
Avalanche Current	I_{AS}	-13.8	A
Avalanche energy $L=0.5\text{mH}$	E_{AS}	95	mJ
Power Dissipation for Single Operation	$P_D (T_c=25^\circ\text{C})$	45	W
Maximum Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	50	/W
Thermal Resistance- Junction-to-Case	$R_{\theta JC}$	2.8	/W

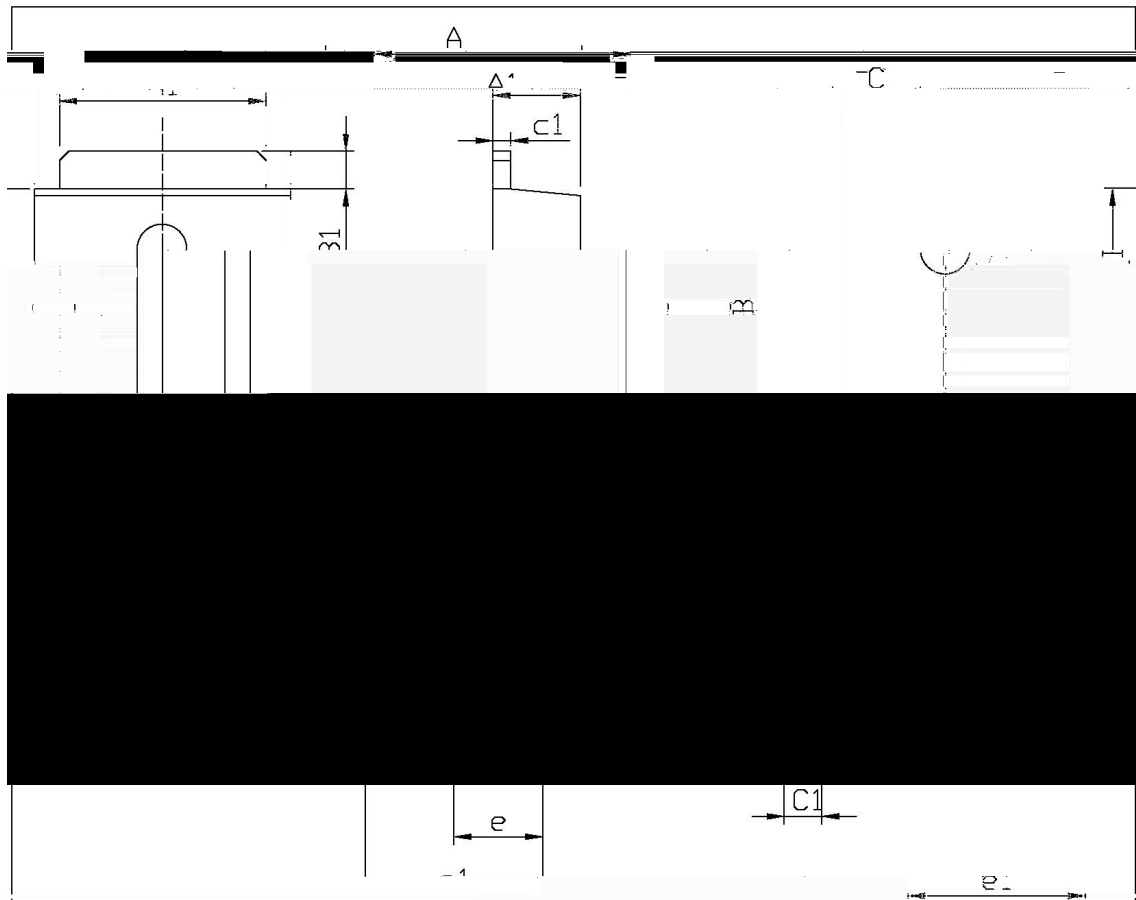
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu\text{A}$ $V_{GS}=0\text{V}$	-60	-69		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60\text{V}$ $V_{GS}=0\text{V}$			-1.0	
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}$ $V_{GS}=\pm 20\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu\text{A}$	-1.0	-1.5	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-10\text{V}$ $I_D=-20\text{A}$		62	75	m
		$V_{GS}=-4.5\text{V}$ $I_D=-10\text{A}$		70	100	
Diode Forward Voltage	V_{SD}	$I_S=-1\text{A}$ $V_{GS}=0\text{V}$			-1.0	V
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$ $V_{DS}=-25\text{V}$ $f=1\text{MHz}$		1380		pF
Output Capacitance	C_{oss}			100		
Reverse Transfer Capacitance	C_{rss}			65		
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=-10\text{V}$ $V_{DS}=-30\text{V}$ $I_D=-4\text{A}$		20.8		nC
Total Gate Charge	$Q_{g(4.5V)}$			10.8		
Gate-Source Charge	Q_{gs}			3.5		
Gate-Drain Charge	Q_{gd}			3.6		



Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS}=-10V$ $V_{DS}=-30V$ $R_L=7.5\Omega$ $R_{GEN}=3\Omega$		8		ns
Turn-on Rise Time	t_r			3.8		
Turn-off Delay Time	$t_{d(OFF)}$			31.5		
Turn-off Fall Time	t_f			7.5		



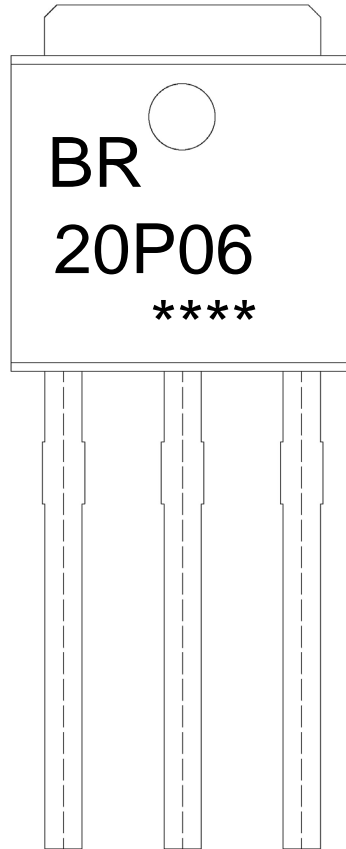




单位: mm

Dimensions in Millimeters				Dimensions in Millimeters			
Max.	Symbol	Min.	Max.	Symbol	Min.	Max.	Symbol
6.75	α	0.50	0.90	A	6.45		
5.50	b	9.00	9.40	A'	5.10		
9.5		6.25	c1	0.45	0.55		B
	B1	0.95	1.25	c1	0.45	0.55	
	C	2.20	2.40	e	2.24	2.34	
5.95	e1	4.43	4.73				C1

TC-251



BR

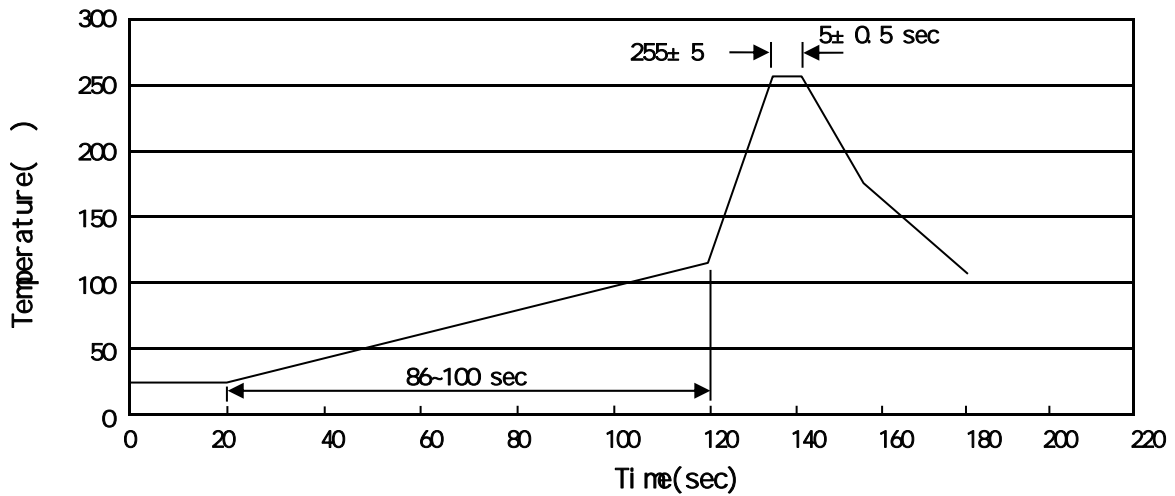
20P06

Note:

BR: Company Code

20P06: Product Type Code

****: 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)		
TO-251	1,000	10	10,000	5	50,000	135x190	237x172x102	560x245x195

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
TO-251/252	75	48	3,600	5	18,000	526x20.5x5.25	555x164x50	575x290x180