

N TO-220

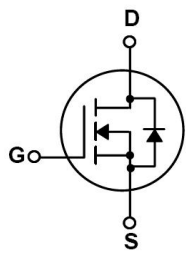
N-CHANNEL MOSFET in a TO-220 Plastic Package.

$R_{DS(on)}$ C_{rss}

Low $R_{DS(on)}$, low gate charge, low C_{rss} , fast switching, Trench Technologies. Halogen-free Product.

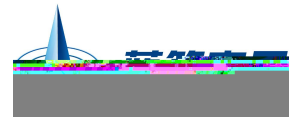
DC/DC

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



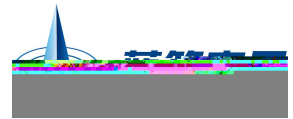
PIN1 G PIN 2 D PIN 3 S

See Marking Instructions.



参数 Parameter		符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage		V_{DSS}	60	V
Drain Current		$I_D(T_c=25^{\circ}\text{C})$	50	A
Drain Current - Pulsed		I_{DM}	200	A
Gate-Source Voltage		V_{GS}	± 20	V
Avalanche Current		I_{AS}	20	A
Single Pulsed Avalanche Energy		E_{AS}	170	mJ
Power Dissipation		$P_D(T_c=25^{\circ}\text{C})$	75	W
Storage Temperature Range		T_{stg}	-55~150	$^{\circ}\text{C}$
Thermal Resistance-Junction to Ambient	$t \leq 10\text{s}$	$R_{\theta JA}$	12.5	$^{\circ}\text{C/W}$
	Steady-State		51	
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	1.7	

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0\text{V}$ $I_D=250\mu\text{A}$	60	66		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{V}$ $V_{GS}=0\text{V}$			1.0	μA
		$V_{DS}=48\text{V}$ $T_C=150^{\circ}\text{C}$			10	
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20\text{V}$ $V_{DS}=0\text{V}$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu\text{A}$	1	1.7	3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$ $I_D=25\text{A}$		11.8	15	m Ω
		$V_{GS}=4.5\text{V}$ $I_D=18\text{A}$		15.5	20	
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}$ $I_S=25\text{A}$			1.25	V
Gate resistance	R_g	$V_{GS}=0\text{V}$ $V_{DS}=0\text{V}$, $f=1\text{MHz}$		1.49		Ω
Input Capacitance	C_{iss}	$V_{DS}=25\text{V}$ $V_{GS}=0\text{V}$ $f=1.0\text{MHz}$		2640		pF
Output Capacitance	C_{oss}			128		
Reverse Transfer Capacitance	C_{rss}			115		
Total Gate Charge	$Q_g(10\text{V})$	$V_{GS}=10\text{V}$ $V_{DS}=30\text{V}$ $I_D=20\text{A}$		47.5	68	nC
Total Gate Charge	$Q_g(4.5\text{V})$			24	35	
Gate Source Charge	Q_{gs}			6		
Gate Drain Charge	Q_{gd}			14.5		



参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=30V$ $R_L=1.5\Omega$ $R_{GEN}=3\Omega$		8		ns
Turn-On Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(off)}$			30		
Turn-Off Fall Time	t_f			5.5		

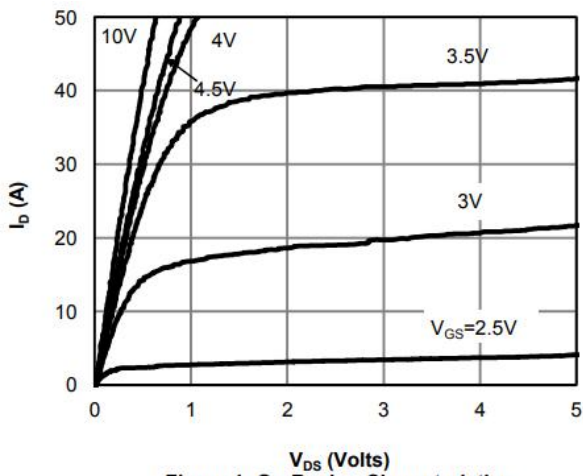
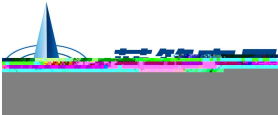


Figure 1: On-Region Characteristics

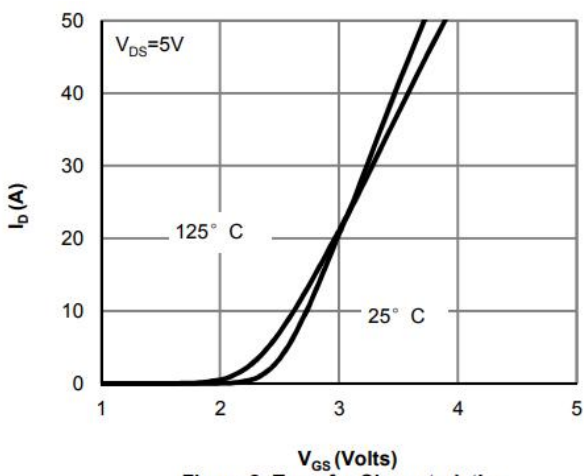
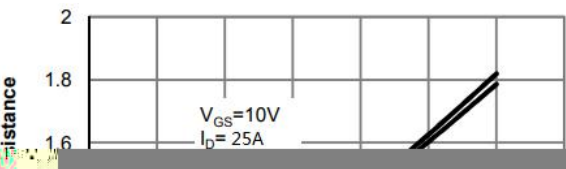
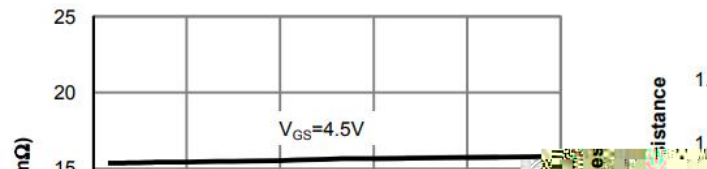
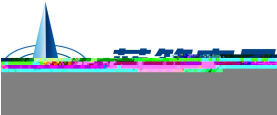
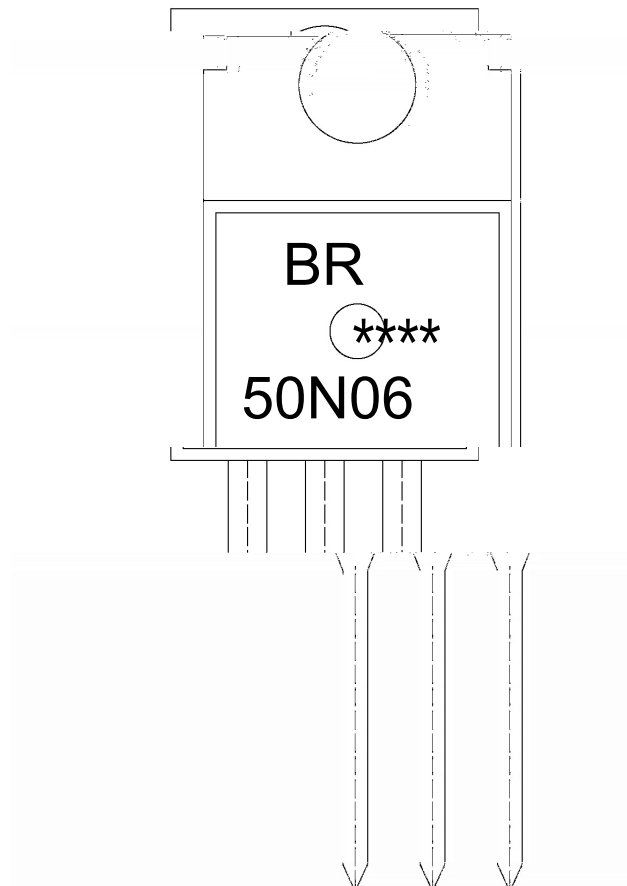
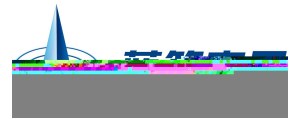


Figure 2: Transfer Characteristics







Note:

BR: Company Code

50N06: Product Type.

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

