

/ Revised record

F	2018-7				
G	2019-11-30	2	RDSON 上限由原来的 22mR 改为 27mR		
H	2022-7-9	2 3	庞隆基申请 RDSON 上限由原来的 27mR 改为 35mR(典型值 18 改成 30), 更新曲线图		

/ Descriptions

TO-220 P MOS

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

/ Features

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

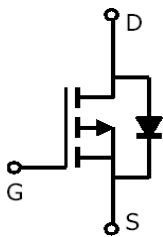
Low $R_{DS(on)}$, low gate charge, low C_{rss} , fast switching.

/ Applications

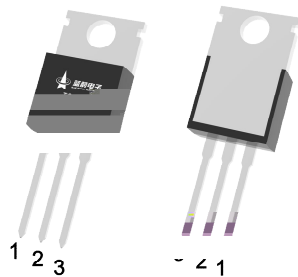
DC/DC

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

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25 n)

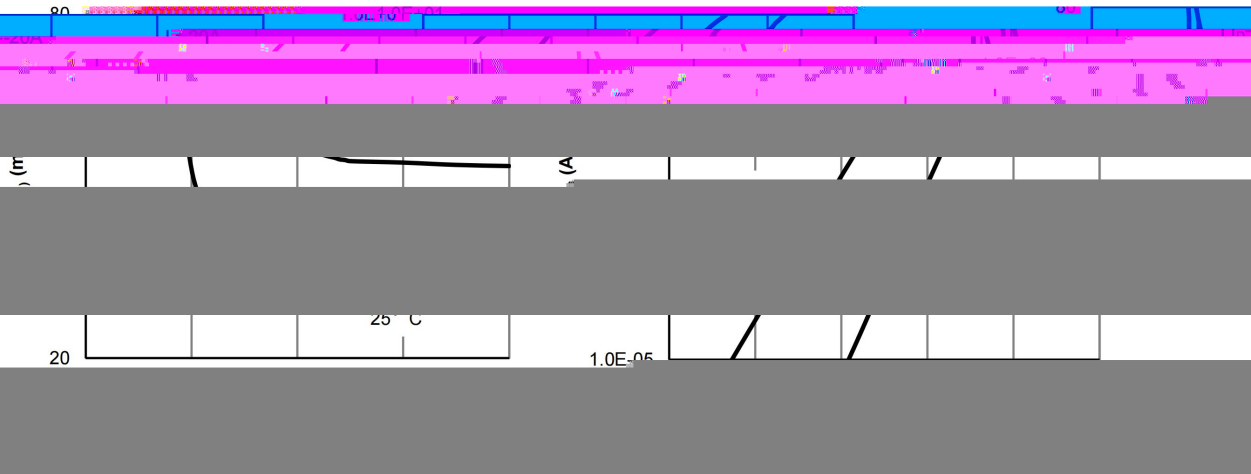
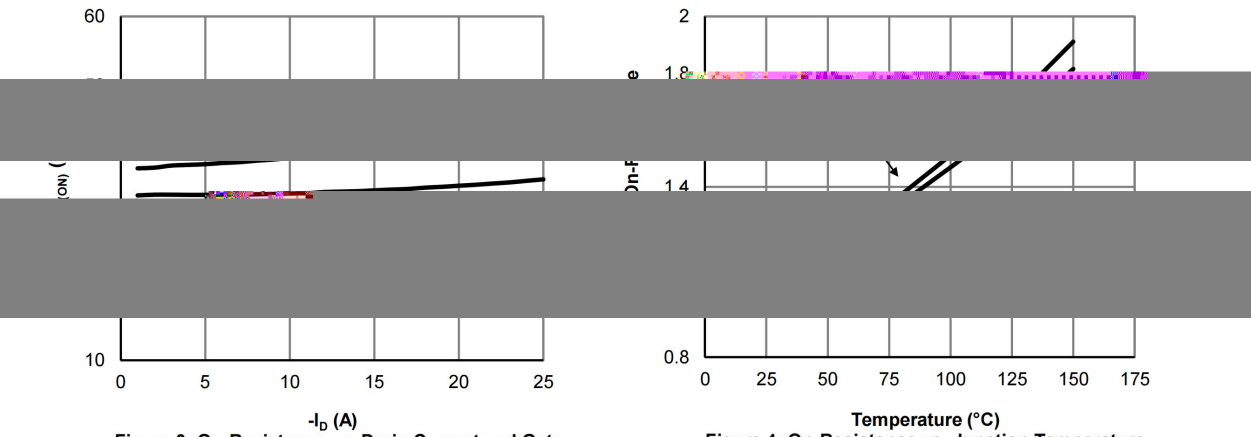
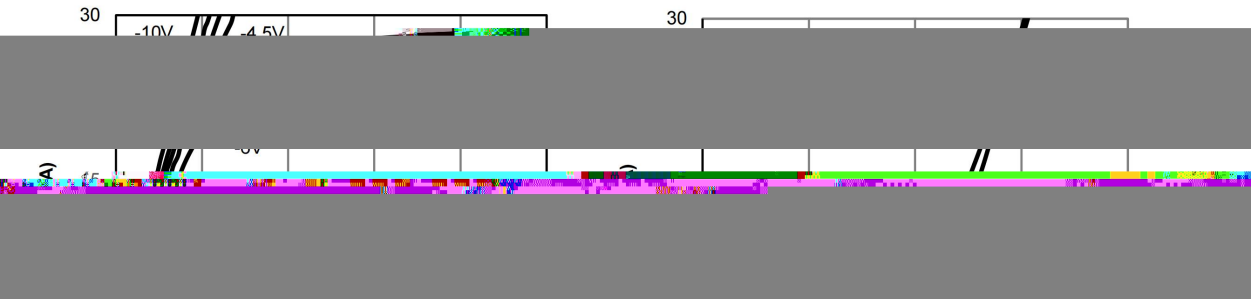
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-60	V
Drain Current		$I_D(T_C=25^{\circ}C)$	-50	A
Drain Current - Pulsed		I_{DM}	-200	A
Gate-Source Voltage		V_{GS}	± 20	V
Power Dissipation		$P_D(T_C=25^{\circ}C)$	118	W
Single Pulsed Avalanche Energy		E_{AS}	250	mJ
Avalanche Current(L=0.5mH)		I_{AS}	25	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^{\circ}C$
Thermal resistance, junction - ambient	$t \leq 10s$	$R_{\theta JA}$	15	$^{\circ}C/W$
	Steady-State		60	
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	1.1	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V \quad I_D=-250\mu A$	-60	-68		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V \quad V_{GS}=0V$			-1.0	μA
		$V_{DS}=-48V \quad T_C=150^{\circ}C$			-10	
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V \quad V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS} \quad I_D=-250\mu A$	-1	-1.6	-3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V \quad I_D=-20A$		30	35	$m\Omega$
	$R_{DS(on)}$	$V_{GS}=-4.5V \quad I_D=-10A$		40	45	$m\Omega$
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V \quad I_S=-1A$			-1.2	V
Gate resistance	R_g			10		Ω
Input Capacitance	C_{iss}	$V_{DS}=-25V \quad V_{GS}=0V$ $f=1.0MHz$		3200		pF
Output Capacitance	C_{oss}			800		pF
Reverse Transfer Capacitance	C_{rss}			270		pF
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=-10V, \quad V_{DS}=-30V,$ $I_D=-20A$		45		nC
Total Gate Charge F	$Q_{g(4.5V)}$			23		
Gate Source Charge	Q_{gs}			9.3		
Gate Drain Charge	Q_{gd}			10.2		

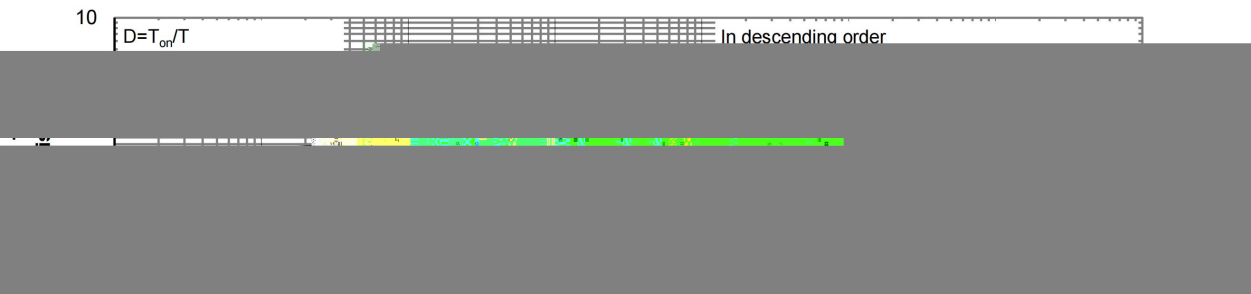
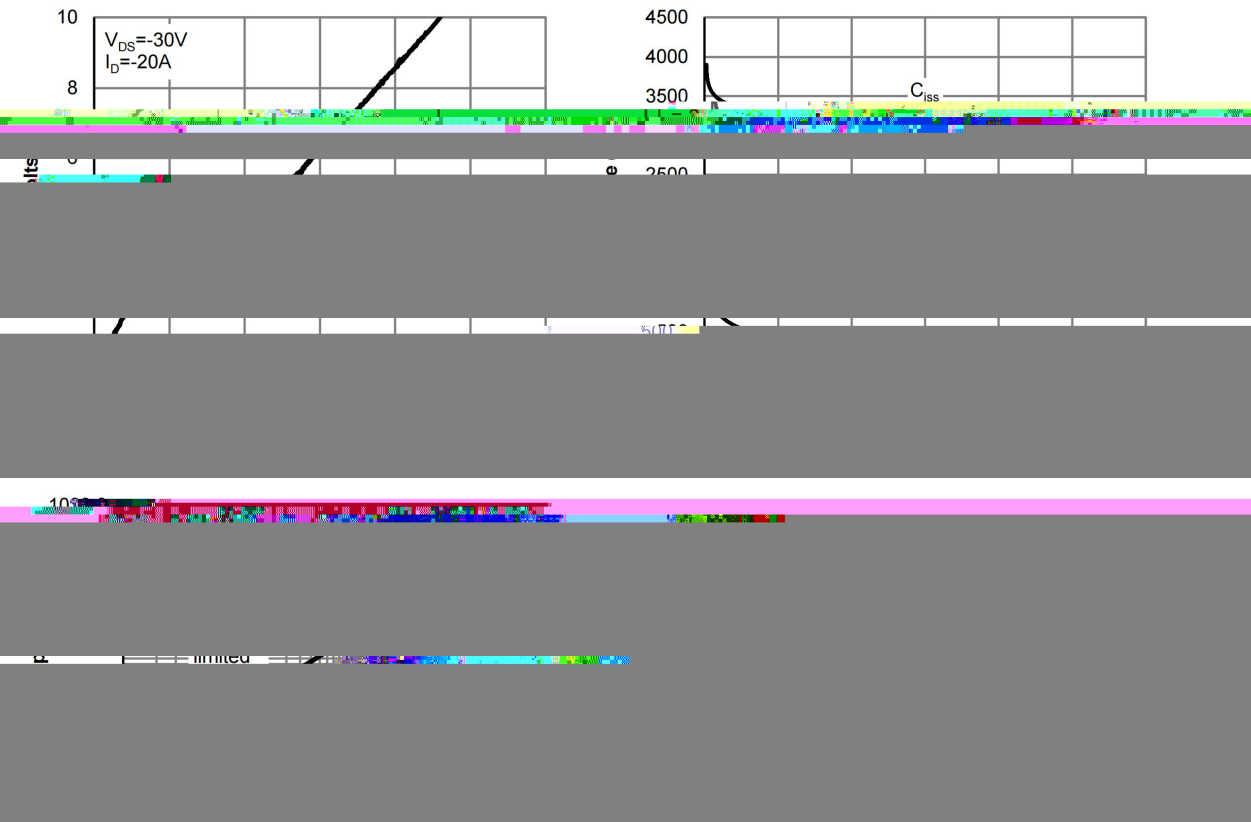
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-10V$ $V_{DS}=-30V$ $R_L=1.5$ $R_{GEN}=3\ \Omega$		12		ns
Turn-On Rise Time	t_r			14.5		
Turn-Off Delay Time	$t_{d(off)}$			38		
Turn-Off Fall Time	t_f			15		

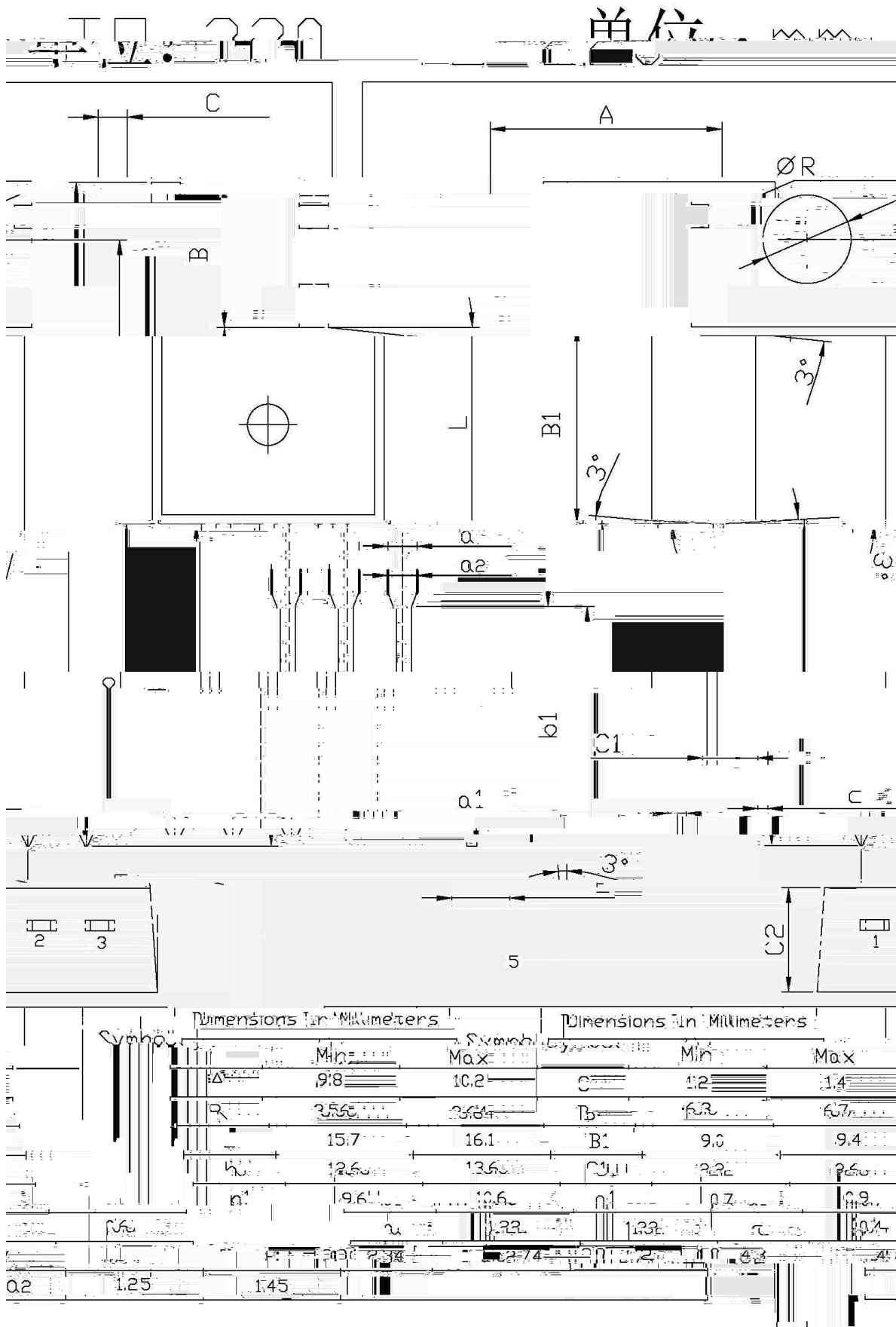
/ Electrical Characteristic Curve



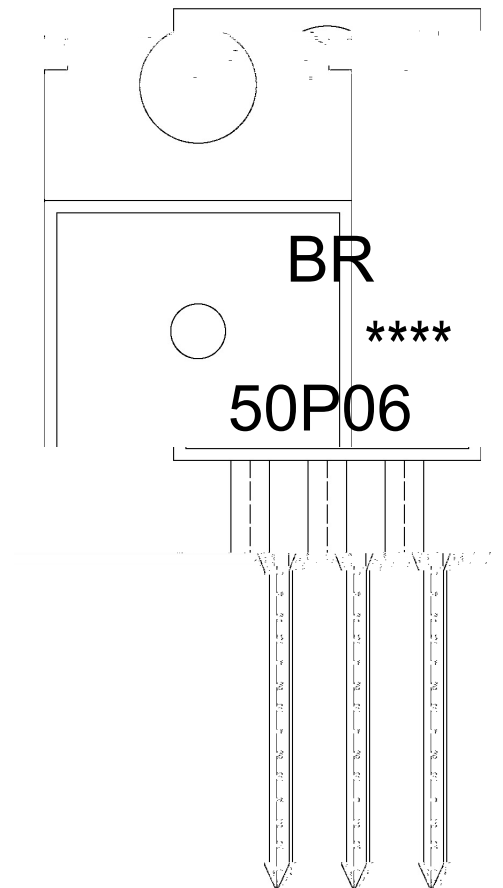
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

50P06

Note:

BR: Company Code

50P06: Product Type

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

