

BR40P03

Rev.F Jul.-2018

/ Descriptions

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

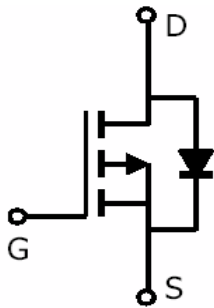
/ Features

Low On-Resistance, High Current, High Speed switching, fast switching.

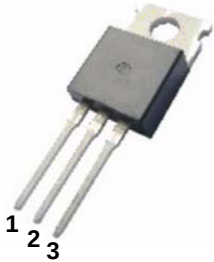
/ Applications

LED DC/DC DC/AC
LED Power Controller,DC-DC&DC-AC Converters.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 D PIN 3 S

/ h_{FE} Classifications & Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Drain Current	$I_D(T_c=25)$	-40	A
Drain Current	$I_D(T_c=100)$	-20	A
Pulsed Drain Current	I_{DM}	-120	A
Gate-Source Voltage	V_{GS}	± 25	V
Avalanche Current	I_{AS}	62	A
Total Power Dissipation	$P_D(T_c=25)$	80	W
Junction Temperature Range	T_j	-55 150	
Storage Temperature Range	T_{stg}	-55 150	
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	65	/W
Thermal Resistance Junction-Case	$R_{\theta JC}$	3.72	/W

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	BV_{DSS}	$V_{GS}=0V$ $I_D=-250\mu A$	-30			V
BVDSS Temperature Coefficient	$\frac{BV_{DSS}}{T_j}$	$I_D=-1mA$ $T_a=25$		-0.01		V/
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-10V$ $I_D=-24A$			14	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V$ $V_{GS}=0V$			-1.0	μA
		$V_{DS}=-24V$ $T_c=150$			-25	
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 25V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1		-3	V
Forward Transconductance	g_{fs}	$V_{DS}=-10V$ $I_D=-24V$		35		S
Total Gate Charge	Q_g	$V_{DS}=-24A$ $I_D=-24V$ $V_{GS}=-4.5V$		30	55	nC
Gate-Source Charge	Q_{gs}			6		
Gate-Drain Charge	Q_{gd}			25		
Input Capacitance	C_{iss}	$V_{DS}=-25V$ $V_{GS}=0V$ $f=1.0MHz$		2200	3395	pF
Output Capacitance	C_{oss}			635		
Reverse Transfer Capacitance	C_{rss}			560		

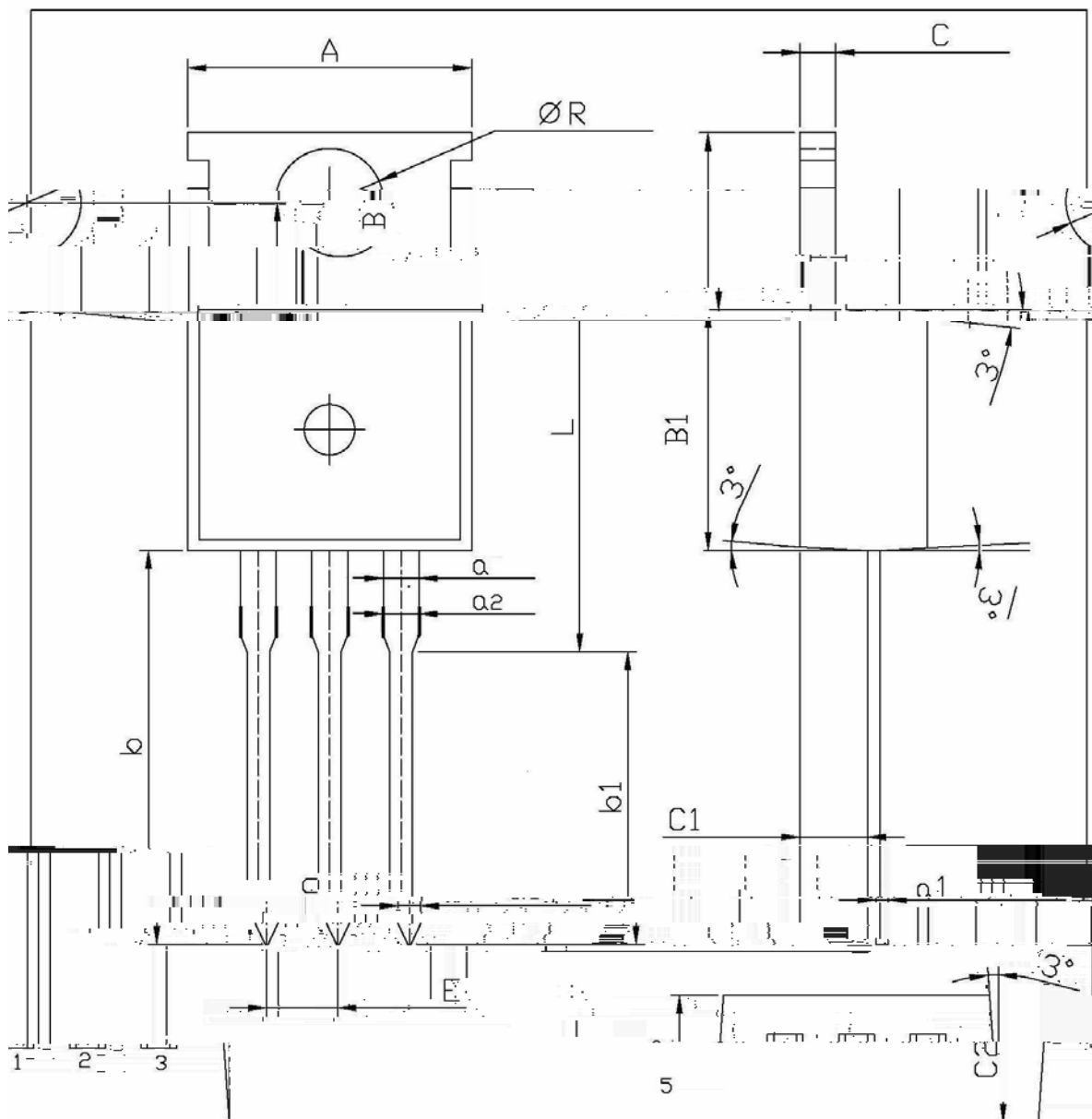
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-15V$ $I_D=-24A$ $R_G=3.3\Omega$ $V_{GS}=-10V$ $R_D=0.63\Omega$		10		ns
Rise Time	t_r			65		
Turn-Off Delay Time	$t_{d(off)}$			60		
Fall Time	t_f			100		
Reverse Recovery Time ²	t_{rr}	$V_{GS}=0V$ $I_S=-24A$ $di/dt=-100A/\mu s$		39		nC
Reverse Recovery Charge	Q_{rr}			38		
Diode Forward Voltage ²	V_{SD}	$V_{GS}=0V$ $I_S=-24A$ $T_J=25$			-1.2	V

/ Package Dimensions

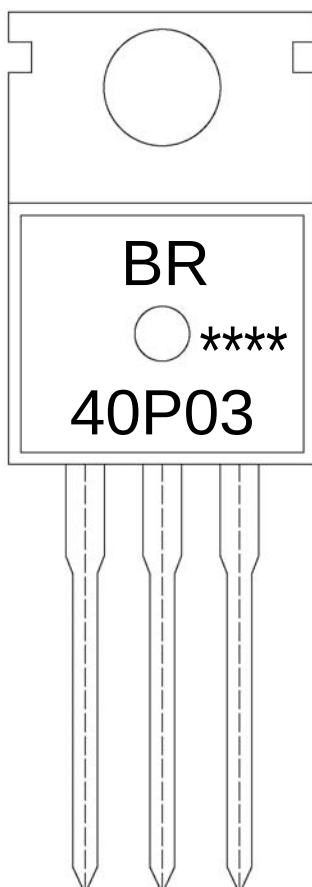
TQ-220

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
C	1.2	1.4	A	9.8	10.2
B	6.3	6.7	R	3.56	3.64
B1	9.0	9.4	L	15.7	16.1
C1	2.2	2.6	b	12.6	13.6
a1	0.7	0.9	b1	9.6	10.6
c	0.4	0.6	a	1.22	1.32
C2	4.3	4.7	E	2.24	2.74
			L02	1.25	1.45

/ Marking Instructions



BR

40P03

Note:

BR: Company Code

40P03: Product Type.

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

