

**/ Descriptions**

KF \$\* G Insulated-Gate Bipolar Transistor in a TO-3P Plastic Package.

**/ Features**

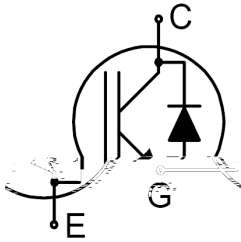
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Low gate charge,, Low saturation voltage ,Positive temperature coefficient, RoHS product.

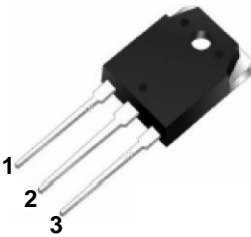
**/ Applications**

General purpose inverter, Frequency converters, Induction Heating(IH), Uninterrupted Power Supply(UPS).

**/ Equivalent Circuit**



**/ Pinning**



PIN1 Gate      PIN 2 Collector      PIN 3 Emitter

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

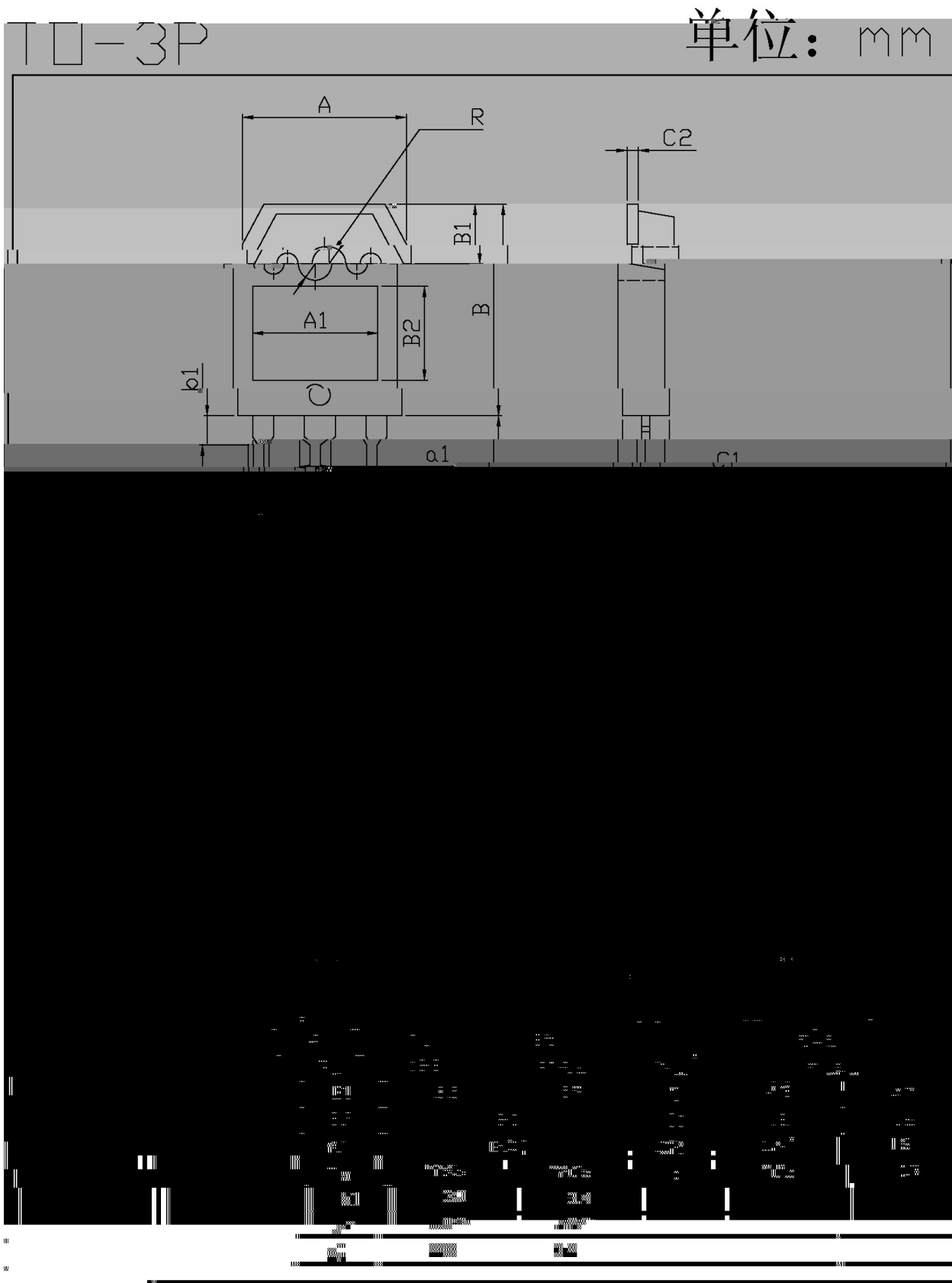
See Marking Instructions.

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	$V_{CES}$	1200	V
Gate-emitter voltage	$V_{GES}$	$\pm 20$	V
Collector current	$I_C$	50	A
Collector current@ $T_C=100$		25	A
Collector peak current, $T_P$ limited by $T_{JMAX}$			
Diode forward current@ $T_C=100$	$I_F$	25	A
Diode maximum forward current	$I_{EM}$	75	A
Power dissipation( $T_c=100$ )	$P_D$		
Operating junction and storage temperature range	$T_J, T$		

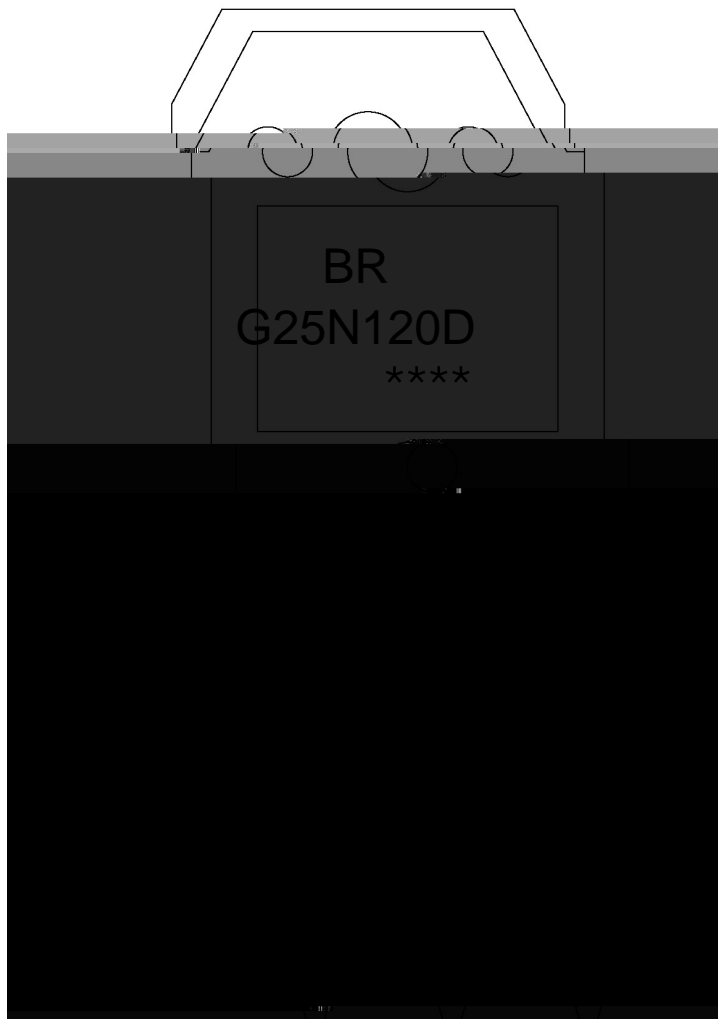
**/ Electrical Characteristics(Ta=25 )**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-on delay time	$t_{d(ON)}$	$V_{CE}=600V$ $I_C=25A$ $R_G=10$ $V_{GE}=15V$ Inductive Load	-	42	-	ns
Rise time	$t_r$		-	36	-	
Turn-off delay time	$t_{d(OFF)}$		-	224	-	
Fall time	$t_f$		-	314	-	
Turn-On Switching Loss	$E_{on}$		-	1.1	2.2	mJ
Turn-Off Switching Loss	$E_{off}$		-	1.3	1.5	
Total Switching Loss	$E_{ts}$		-	2.2	3.6	
Total gate charge	$Q_G$	$V_{CE}=600V$ $I_C=25A$ $V_{GE}=15V$	-	177	274	nC
Gate-emitter charge	$Q_{G-E}$		-	16	26	
Gate-collector charge	$Q_{G-C}$		-	61	94	
Diode forward voltage	$V_F$	$I_F=25A$	-	1.5	2.7	V
Reverse recovery time	$T_{rr}$	$I_F=25A$ $di/dt=200A/ S$	-	535	585	ns
Diode Peak Reverse Recovery Current	$I_{rr}$		-	43	85	A
Reverse recovery charge	$Q_{rr}$		-	13	15	uC

/ Package Dimensions



**/ Marking Instructions**



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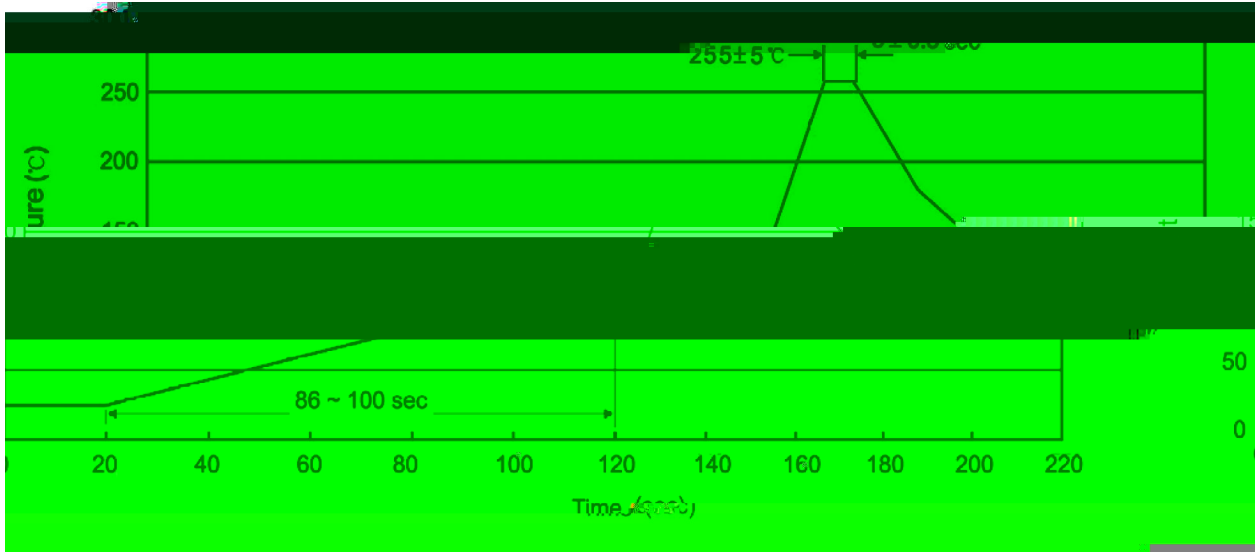
Note:

BR: Company Code.

G25N120D: Product Type.

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

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



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.              |

/ **Resistance to Soldering Heat Test Conditions**

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

/ **Packaging SPEC.**

/ **TUBE**

Package Type	Units					Dimension (unit mm <sup>3</sup> )		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-3P	30	15	450	5	2250	497.5×46×8	555×164×50	575 290 180

/ **Notices**