

/ Descriptions

TO-3P N MOS

N-Channel MOSFET in a TO-3P Plastic Package.

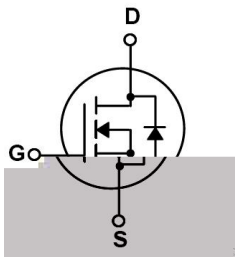
/ Features

 $V_{DS}=500V$ $I_D=24A$ $R_{DS(ON)}@10V$ 0.25 (Typ. 0.17) $R_{DS(ON)}@6V$ 0.3 (Typ. 0.18m)

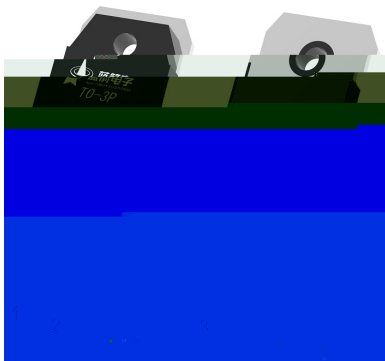
/ Applications

Designed for high voltage, high speed power switching applications such as high efficiency switched mode power supplies, active power factor correction.

/ Equivalent Circuit



/ Pinning



PIN1 G

PIN 2 D

PIN 3 S

/ Marking

See Marking Instructions.

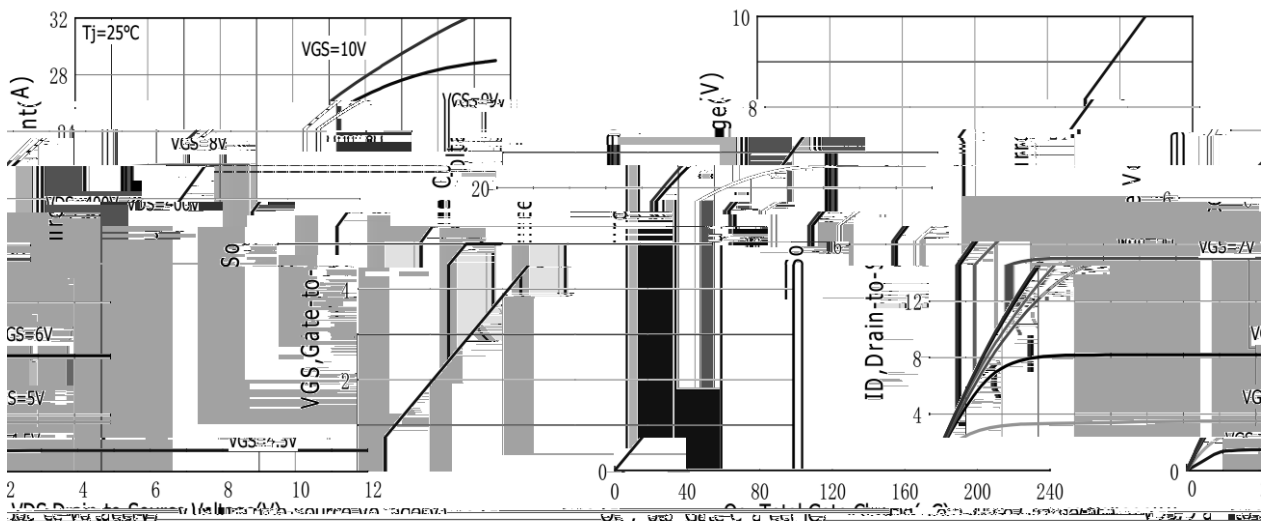
Parameter	Symbol	Rating	Unit
Drain-to-Source Breakdown Voltage	V_{DS}	500	V
Continuous Drain Current	$I_D(T_c=25^\circ\text{C})$	24	A
Drain Current Pulsed	I_{DM}	90	A
Gate-to-Source Voltage	V_{GS}	± 30	V
Avalanche Current	I_{AS}	21	A
Single Pulse Avalanche Energy	E_{AS}	1960	mJ
Power Dissipation	$P_D(T_c=25^\circ\text{C})$	270	W
Junction Temperature Range	T_j	150	
Storage Temperature Range	T_{stg}	-55 ~ 150	
Thermal Resistance Junction-Case	$R_{\theta JC}$	0.46	/W

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	V_{DS}	$V_{GS}=0V$ $I_D=250\text{ }\mu\text{A}$	500	550		V
Drain-to-Source Leakage Current	I_{DSS}	$V_{DS}=500V$ $V_{GS}=0V$			1.0	A
Gate-to-Source Forward Leakage	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\text{ }\mu\text{A}$	2.0		4.0	V
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=12A$		0.17	0.25	
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=6V$ $I_D=6A$		0.18	0.3	
Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_{SD}=24A$			1.4	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		4364		pF
Output Capacitance	C_{oss}			311		
Reverse Transfer Capacitance	C_{rss}			138		
Turn-On Delay Time	$t_{d(on)}$			28.8		

 $V_{DD}=250V$
 $R_G=10$
 $I_D=24A$

ns

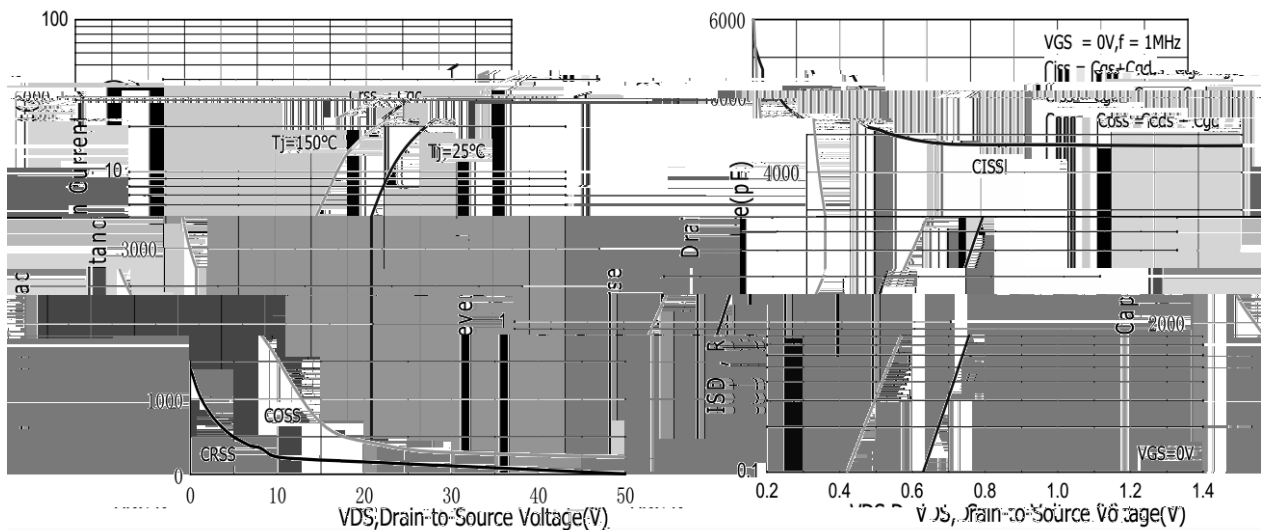
/ Electrical Characteristic Curve



1. Typical Drain Current vs. Drain-to-Source Voltage

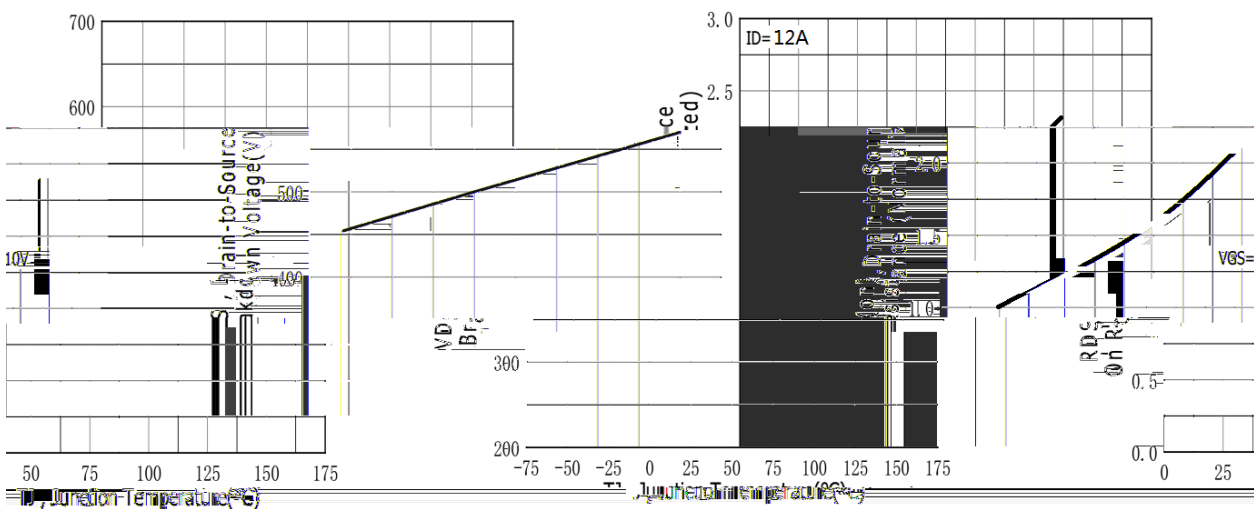
2. Typical Gate Charge vs. Gate-to-Source Voltage

3. Typical Output Power vs. Drain-to-Source Voltage



4. Typical Capacitance vs. Drain-to-Source Voltage

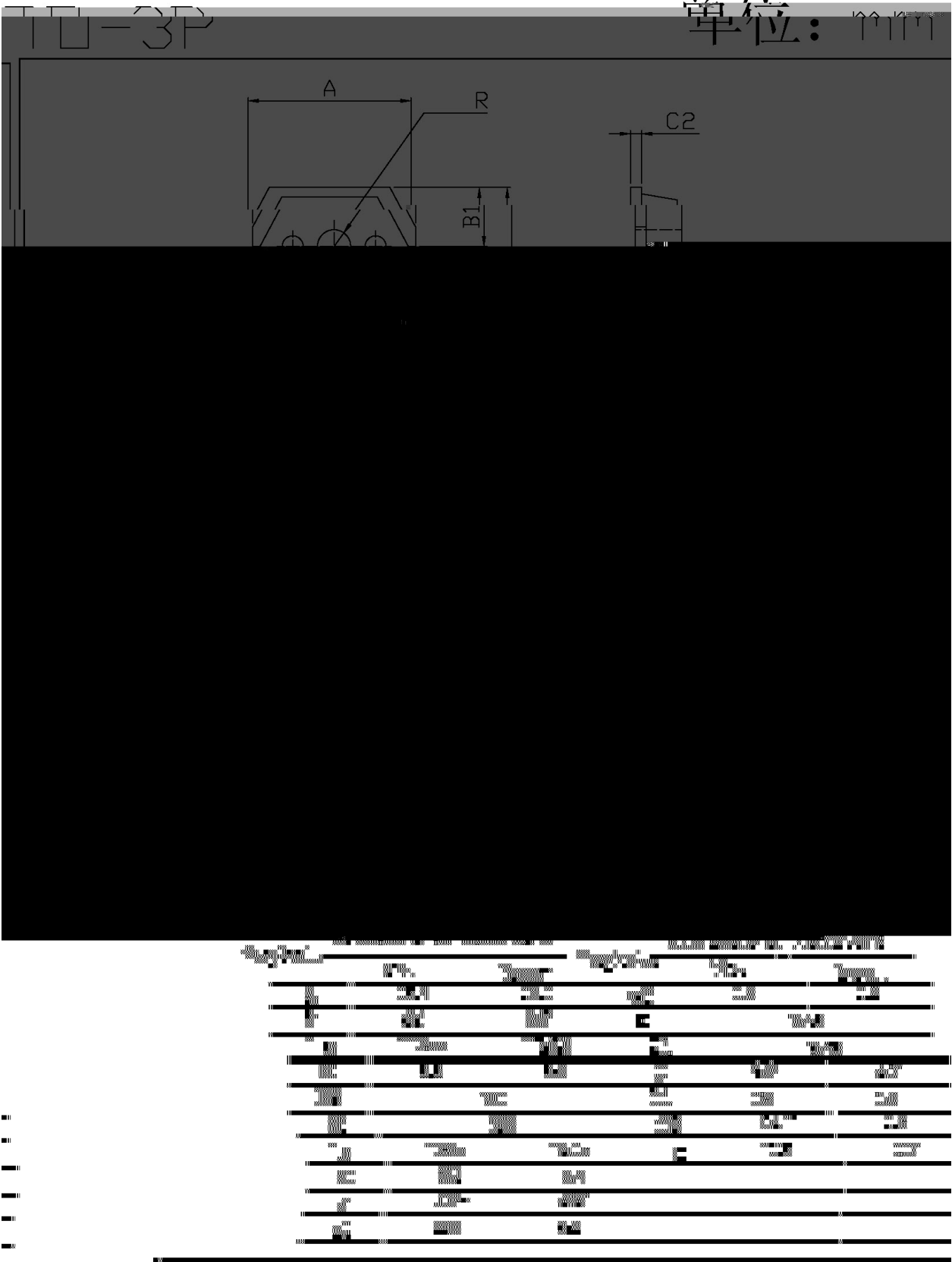
5. Typical Body Diode Transfer Characteristics



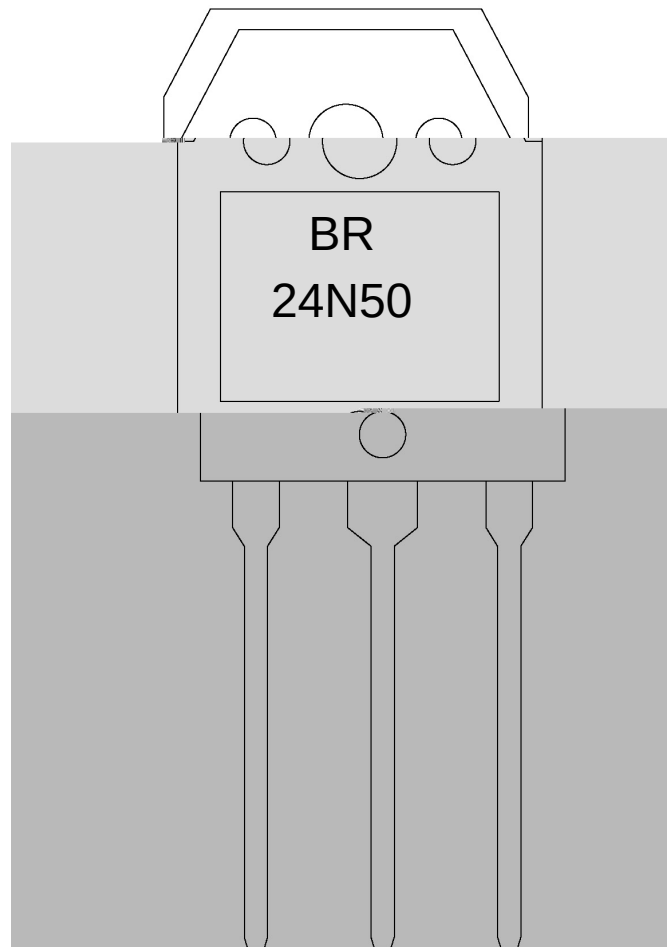
6. Typical Drain-to-Source Voltage vs. Junction Temperature

7. Typical Drain-to-Source Voltage vs. Junction Temperature

/ Package Dimensions



/ Marking Instructions



BR:

24N50

Note:

BR:

Company Code

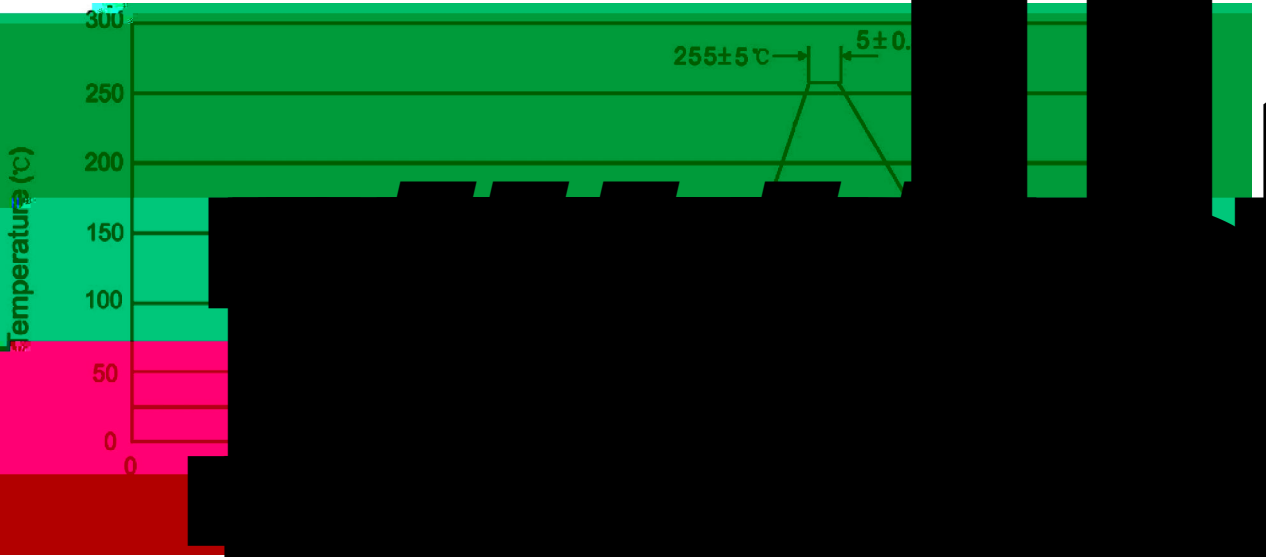
24N50:

Product Type

****:

Lot No. Code, code change with Lot No

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



- 1 25
- 2 255±
- 3

270±5

/ Pac

/ T

Package Type									
TO-3P	30	15	450	5	2,250	497.5×46×8	555×164×50	575×290×180	

/ Notices