Description

This 60V 50A N-Channel MOSFET in a TO-220 Plastic Package.

Applications

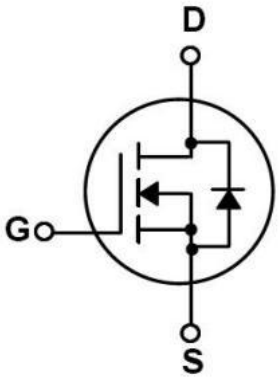
Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products

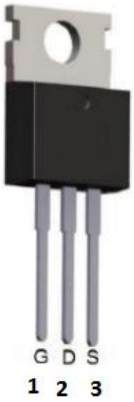
Features

- Low RDS(on)
- Low gate charge
- Low Crss
- Fast switching

V_{DSS}	$R_{DS(on)}$ Typ	I_D
60V	18mΩ	50A

Equivalent Circuit & Pinning





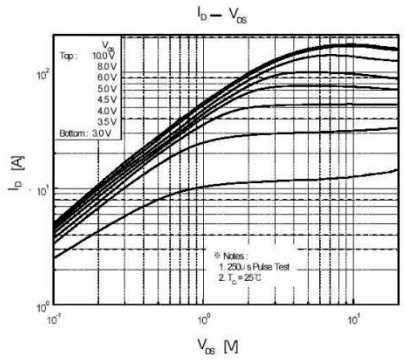
Absolute Maximum Ratings(Ta=25℃)

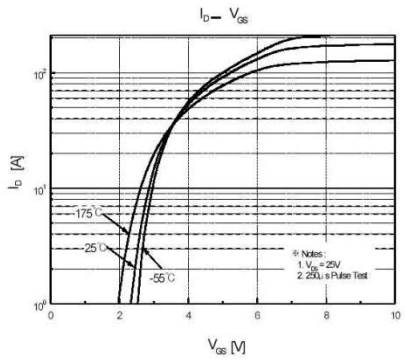
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain Current	I_D(T_c=25℃)	50	A
Drain Current	I_D(T_c=100℃)	35.4	A
Drain Current - Pulsed	I_{DM}	200	A
Gate-Source Voltage	V_{GS}	±20	V
Single Pulsed Avalanche Energy	E_{AS}	490	mJ
Avalanche Current	E_{AR}	12	mJ
Power Dissipation	P_D(Tc=25℃)	120	W
Operating Temperature Range	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

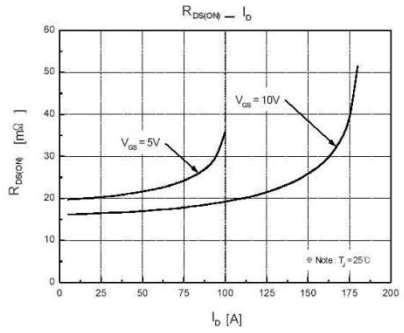
Electrical Characteristics(Ta=25℃)

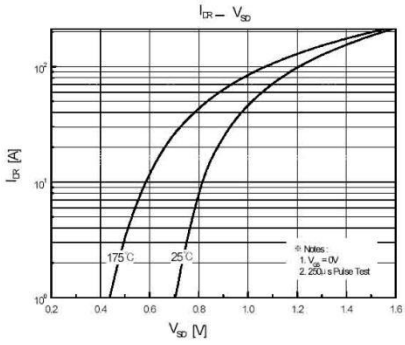
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V V_{GS}=0V			1.0	μA
		V_{DS}=48V T_C=150℃			10	
Gate-Body Leakage Current, Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	2		4	V
Total Gate Charge	Q_g	V_{DS}=48V I_D=50A V_{GS}=10V		32	42	nC
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=25A		0.018	0.022	Ω
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=50A			1.5	V
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		1050	1365	pF
Output Capacitance	C_{oss}			460	600	
Reverse Transfer Capacitance	C_{rss}			70	90	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=30V I_D=25A R_G=25Ω		20	50	ns
Turn-On Rise Time	t_r			100	210	
Turn-Off Delay Time	$t_{d(off)}$			80	170	
Turn-Off Fall Time	t_f			85	180	

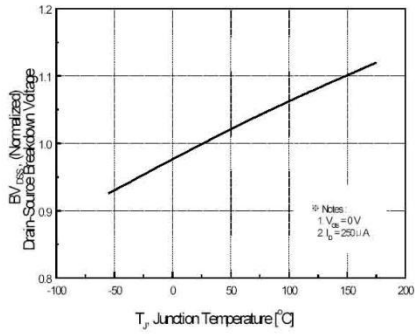
Electrical Characteristic Curve

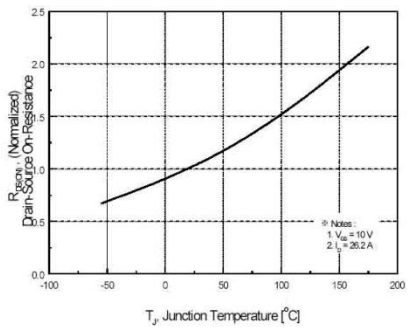


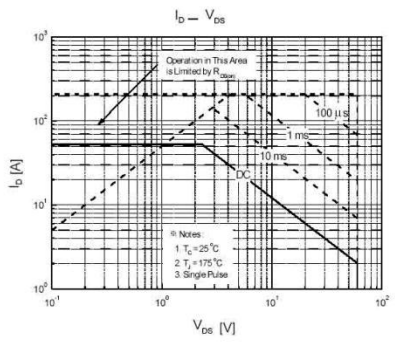


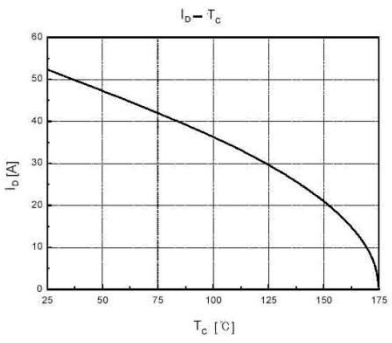




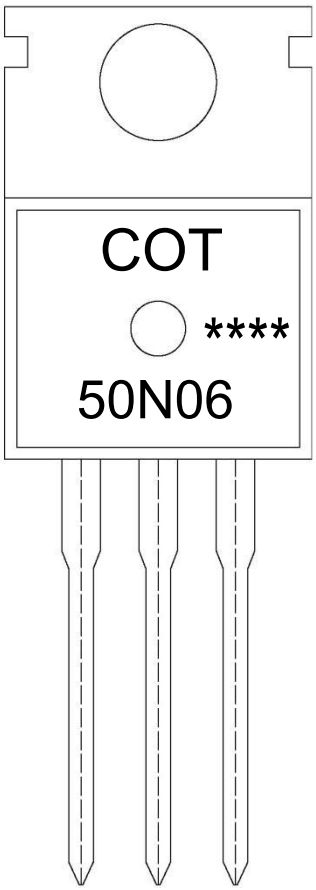








Marking Instructions



Note:

COT: Company Logo.

50N06: Product Type.

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

Packaging SPEC.

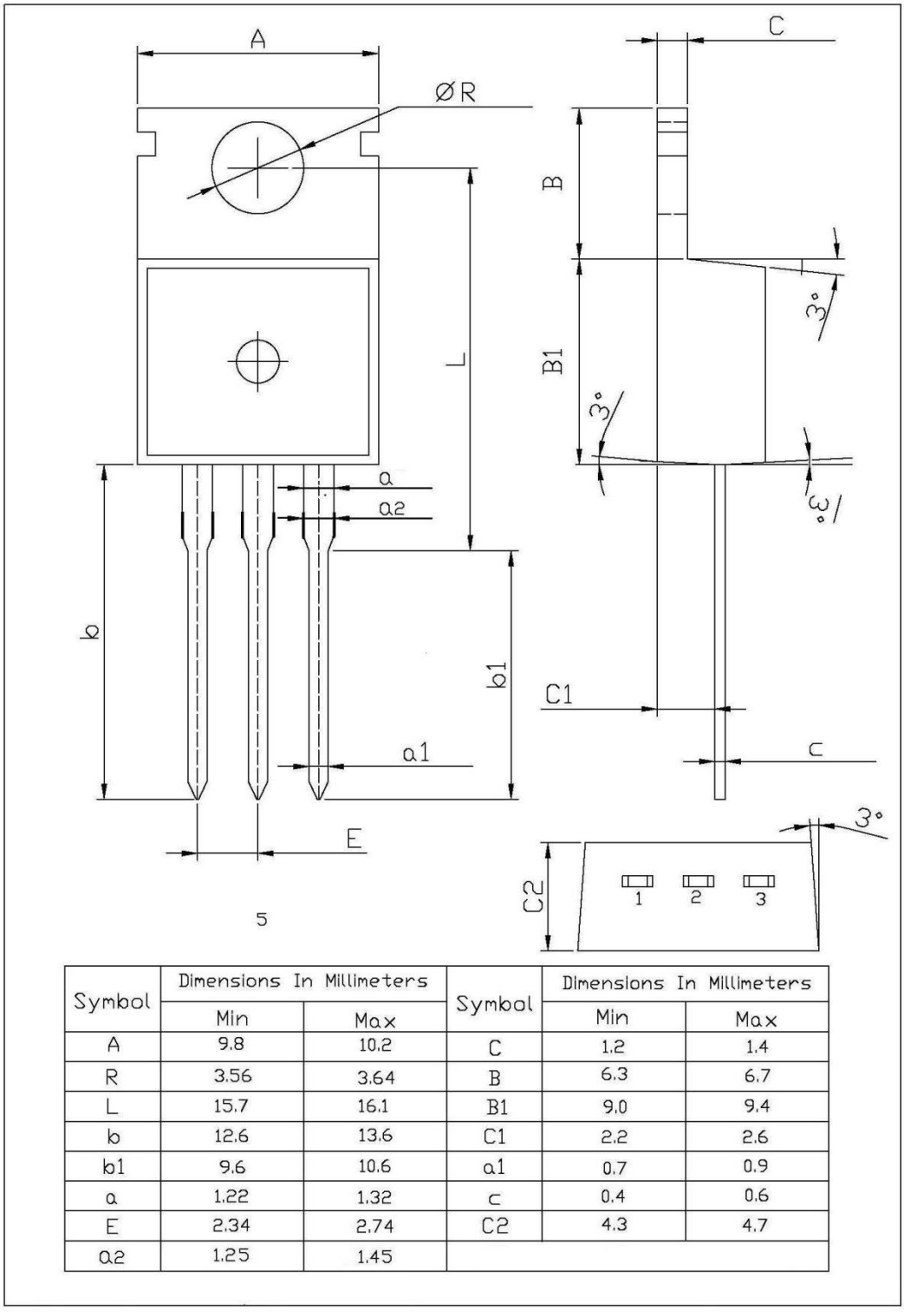
BULK AND TUBE INFOMATIONS

Package Type	Units					Dimension (unit: mm³)		
	Units/Bag	Bags/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Bag	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

Package Type	Units					Dimension (unit: mm³)		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

Package Outline Dimensions

TO-220 单位：mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	9.8	10.2	C	1.2	1.4
R	3.56	3.64	B	6.3	6.7
L	15.7	16.1	B1	9.0	9.4
b	12.6	13.6	C1	2.2	2.6
b1	9.6	10.6	a1	0.7	0.9
a	1.22	1.32	c	0.4	0.6
E	2.34	2.74	C2	4.3	4.7
a2	1.25	1.45			