Descriptions

This 60V,50A N-Channel MOSFET in a TO-252 Plastic Package.

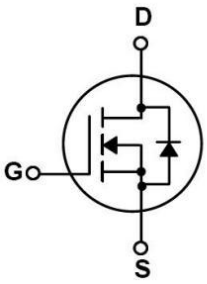
Features

- Low RDS(on)
- Low gate charge
- Low Crss
- Fast speed switching
- Halogen-free Product

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

Equivalent Circuit



Pinning

PIN1：Gate PIN 2：Drain PIN 3：Source PIN 4：Drain

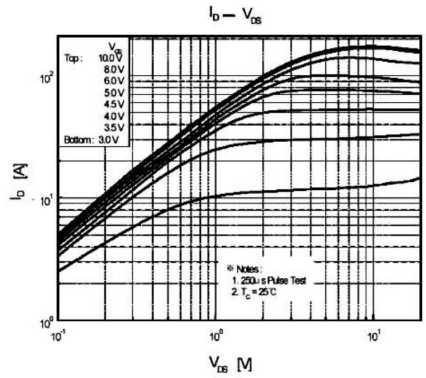
Absolute Maximum Ratings(Ta=25℃)

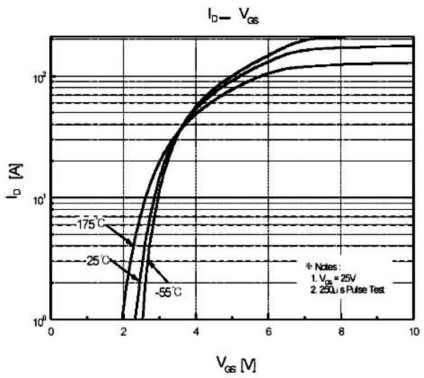
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain Current	I_D(Tc=25℃)	50	A
Drain Current	I_D(Tc=100℃)	35.4	A
Drain Current - Pulsed	I_{DM}	200	A
Gate-Source Voltage	V_{GS}	±20	V
Single Pulsed Avalanche Energy	E_{AS}	490	mJ
Repetitive Avalanche Energy	E_{AR}	12	mJ
Power Dissipation	P_D(Tc=25℃)	85	W
Junction Temperature Range	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

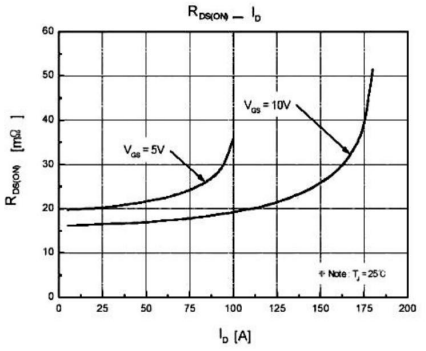
Electrical Characteristics(Ta=25℃)

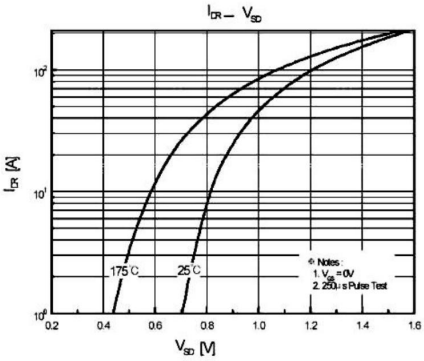
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V V_{GS}=0V			1.0	μA
		V_{DS}=48V T_C=150℃			10	
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	2		4	V
Total Gate Charge	Qg	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	

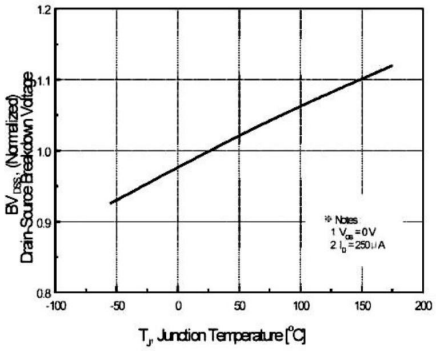
Electrical Characteristic Curve

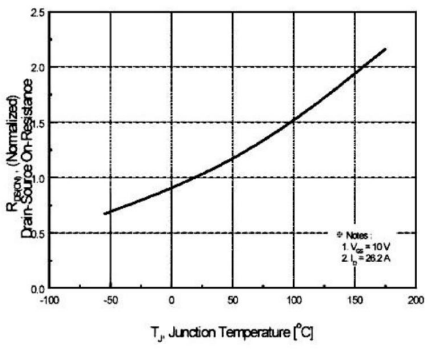


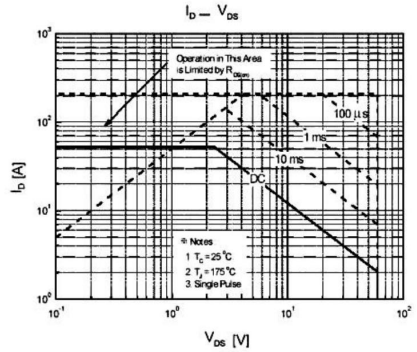


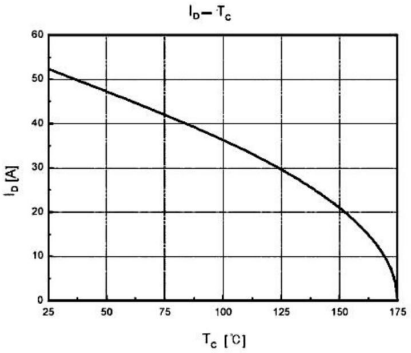




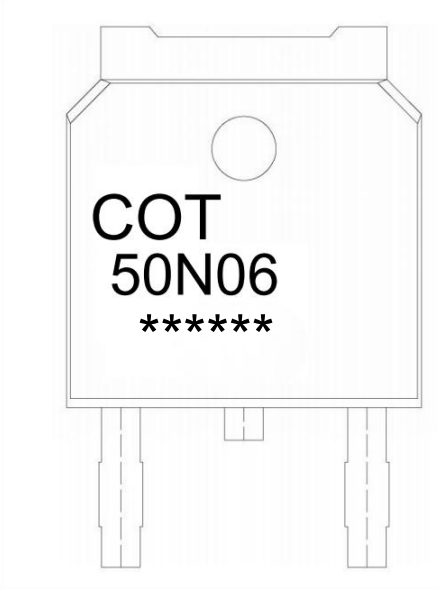








Marking Instructions



Note:

COT: Company Code.

50N06: Product Type.

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

Packaging SPEC

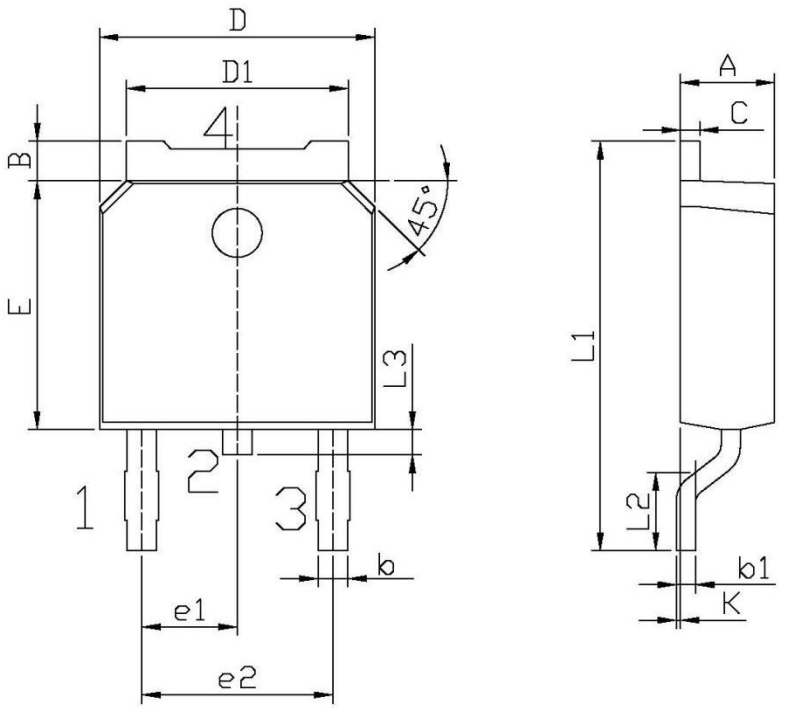
REEL INFORMATION

Package Type	Units					Dimension (unit：mm³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	nner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
TO-252	2,500	2	5,000	6	30,000	13″ ×16	360×360×50	380×335×366

TUBE INFORMATION

Package Type	Units					Dimension (unit：mm³)		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	nner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

Package Outline Dimensions



单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	2.20	2.40	E	5.95	6.25
B	0.95	1.25	e1	2.24	2.34
b	0.70	0.90	e2	4.43	4.73
b1	0.45	0.55	L1	9.85	10.35
C	0.45	0.55	L2	1.70	2.00
D	6.45	6.75	L3	0.60	0.90
D1	5.10	5.50	K	0.00	0.10

TO-252