

/ Descriptions

TO-263 N MOS N-CHANNEL MOSFET in a TO-263 Plastic Package.

/ Features

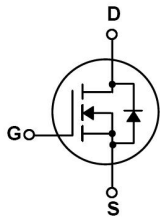
$R_{DS(on)}$ C_{rss}

Low $R_{DS(on)}$, low gate charge, low C_{rss} , fast switching.

/ Applications

DC/DC

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 G PIN 2,4 D PIN 3 S

/ h_{FE} Classifications & Marking

See Marking Instructions

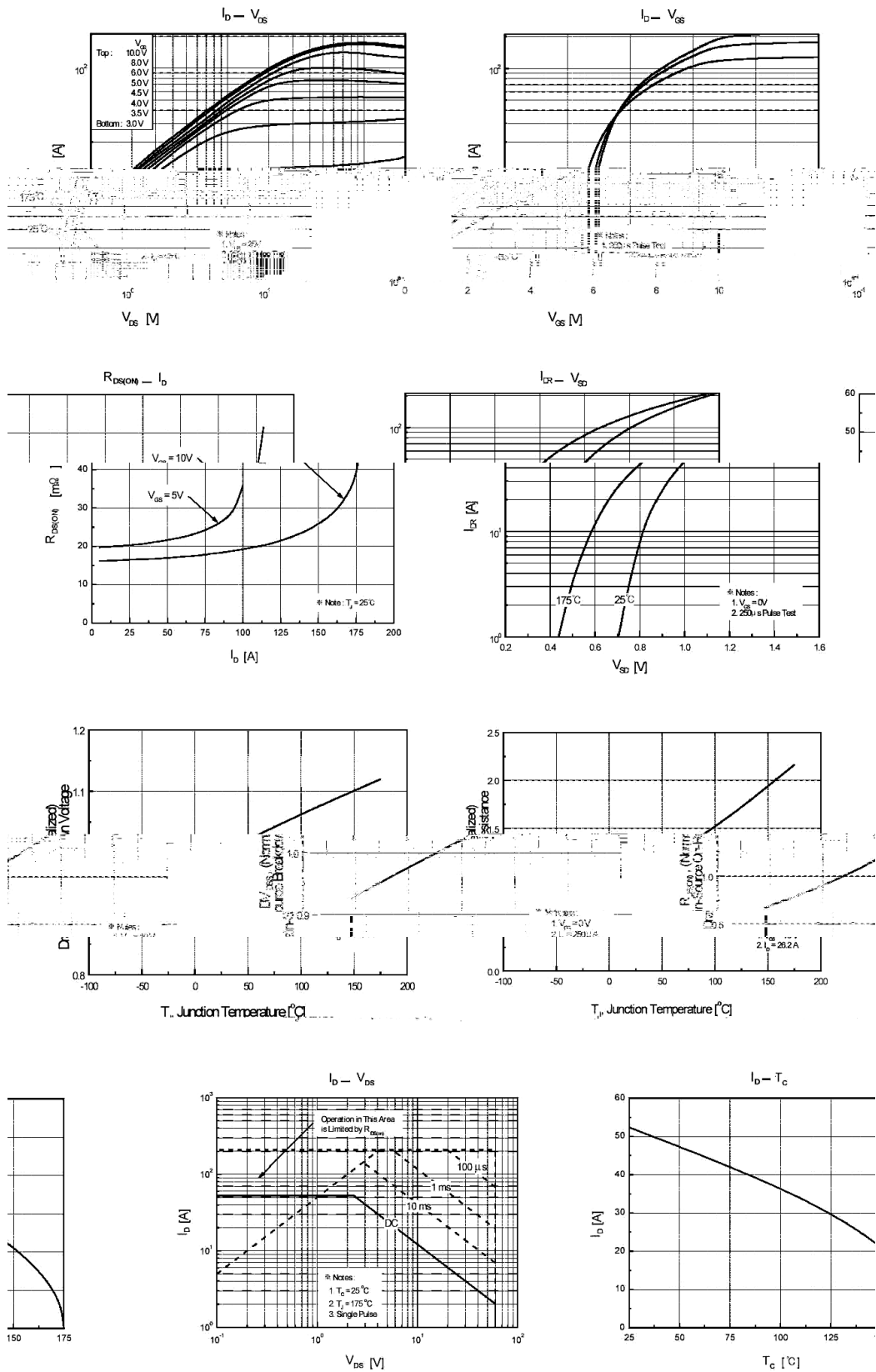
/ Absolute Maximum Ratings(Ta=25)

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
Repetitive Avalanche Energy		E_{AR}	12	mJ
Power Dissipation		$P_D(T_c=25)$	120	W
Junction Temperature Range		T_J	150	
Storage Temperature Range		T_{stg}	-55 150	
Junction to Ambient	$t \leq 10s$	$R_{\theta JA}$	13	/W
	Steady-State		60	
Junction to Case		$R_{\theta JC}$	1.6	

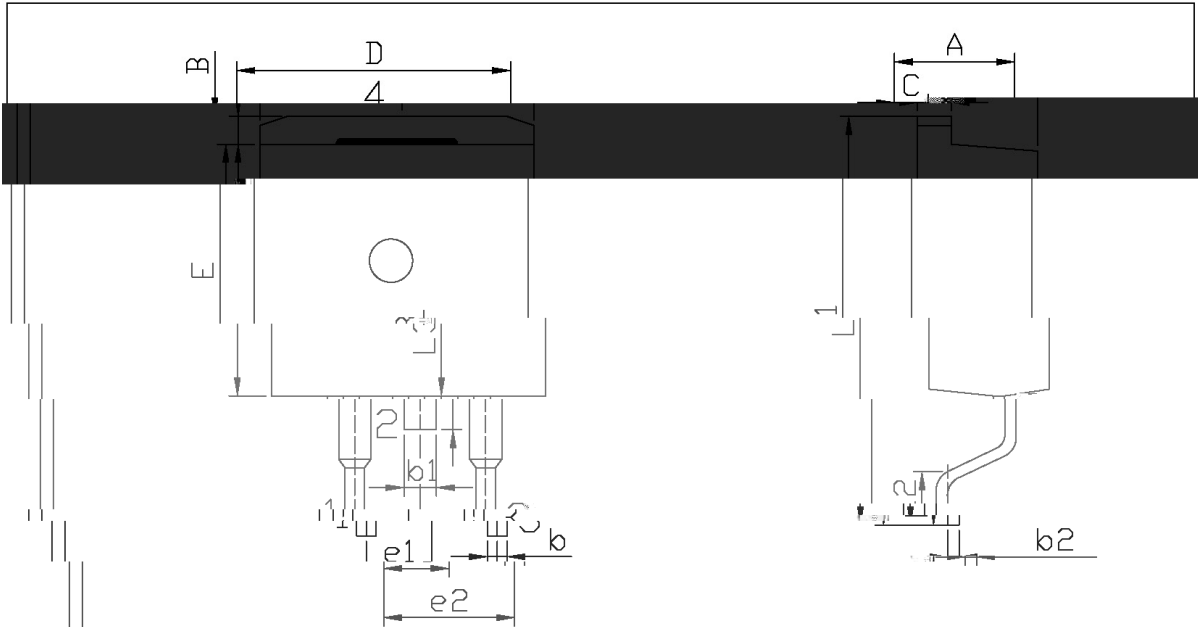
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	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}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	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	pF
Reverse Transfer Capacitance	C_{rss}			70	90	pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=30V$ $I_D=25A$ $R_G=25\Omega$		20	50	ns
Turn-On Rise Time	t_r			100	210	ns
Turn-Off Delay Time	$t_{d(off)}$			80	170	ns
Turn-Off Fall Time	t_f			85	180	ns

/ Electrical Characteristic Curve



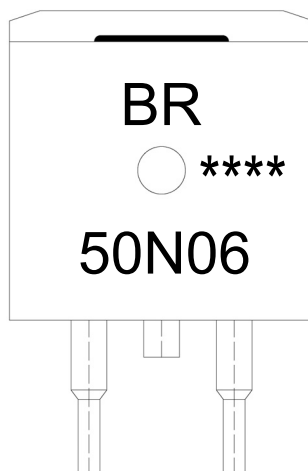
/ Package Dimensions



单位: mm

Dimensions In Millimeters			Dimensions In Millimeters		
Symbol	Min	Max	Symbol	Min	Max
A	4.30	4.70	E	9.00	9.50
B	1.00	1.40	e1	2.34	2.54
b	0.70	0.90	e2	4.88	5.08

/ Marking Instructions



BR

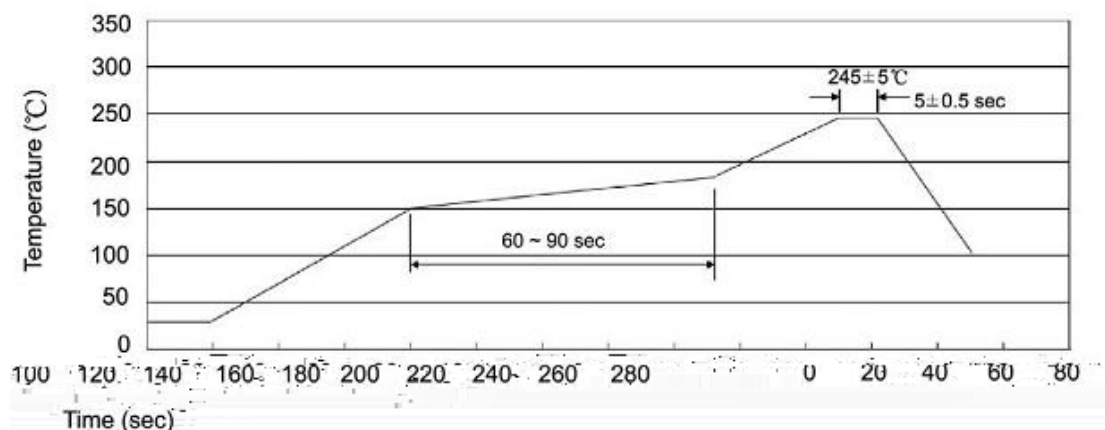
50N06

Note:

BR: Company Code

50N06: Product Type.

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


() / Temperature Profile for IR Reflow Soldering(Pb-Free)


Note:

- | | | | | | |
|---|-------|-----|-----------|----------|---|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245±5 | | 5±0.5sec; | | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 | | | 2 | 10 /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

260±5

10±1 sec.

Temp.:260±5

Time:10±1 sec

/ Packaging SPEC.
/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
TO-263	800	1	800	5	4,000	13 ×24	360×360×50	385×257×392

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-263	50	20	1,000	5	5,000	532×33×7.0	555×164×50	575×290×180

/ Notices