/ Descriptions

TO-252 P MOS

P-CHANNEL MOSFET in a TO-252 Plastic Package.

/ Features

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

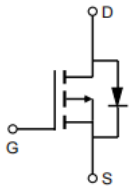
Low $R_{DS(on)}$,low gate charge, low C_{rss}, fast switching, HF Product.

/ Applications

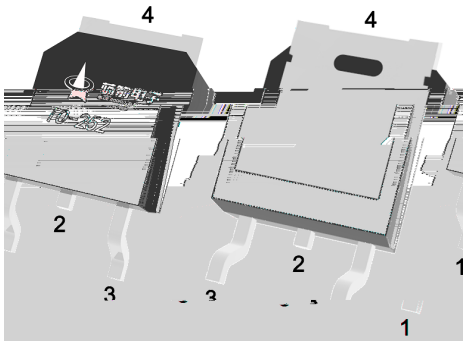
DC/DC

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 D PIN 3 S PIN 4 D

/ Marking

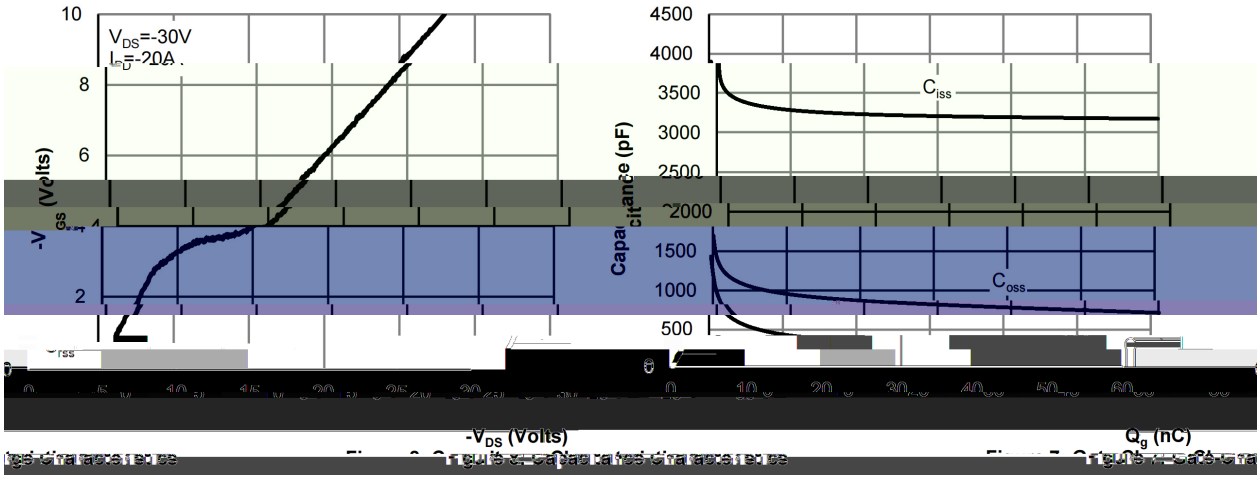
See Marking Instructions.

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-60	V
Drain Current		I_D(Tc=25)	-50	A
Drain Current - Pulsed		I_{DM}	-200	A
Gate-Source Voltage		V_{GS}	±20	V
Power Dissipation		P_D(Tc=25)	85	W
Single Pulsed Avalanche Energy		E_{AS}	250	mJ
Avalanche Current(L=0.5mH)		I_{AS}	25	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	
Thermal resistance, junction - ambient	t ≤ 10s	$R_{\theta JA}$	25	/ W
	Steady-State		50	
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	1.5	

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=-250μA	-60	-68		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	-1	-1.6	-3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V	I_D=-20A		30	35	mΩ
	$R_{DS(on)}$	V_{GS}=-4.5V	I_D=-10A		40	45	mΩ
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V	I_S=-1A			-1.2	V
Gate resistance	Rg				10		Ω
Input Capacitance	C_{iss}	V_{DS}=-25V f=1.0MHz	V_{GS}=0V		3200		pF
Output Capacitance	C_{oss}				800		pF

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	t					

/ Electrical Characteristic Curve



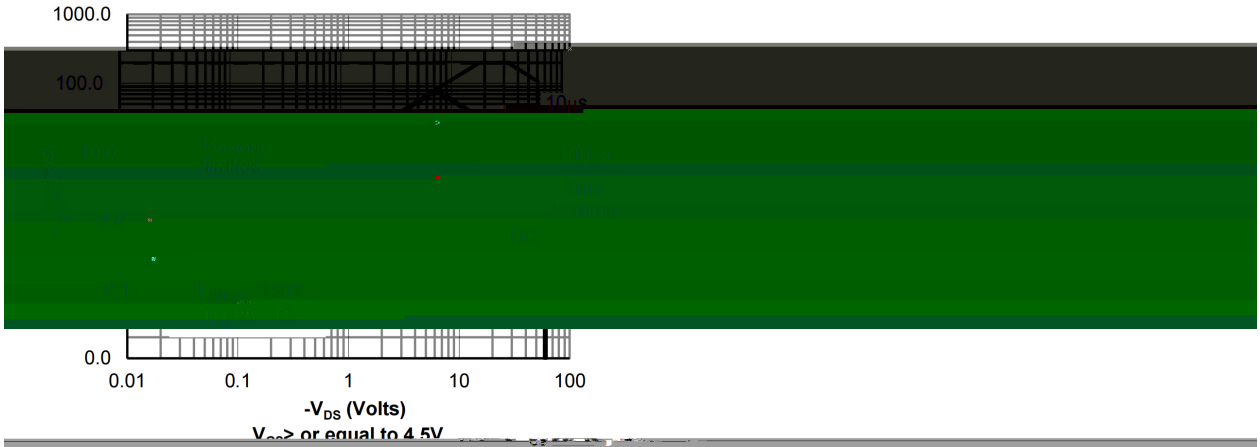


Figure 9: Maximum Forward Biased Safe Operating Area

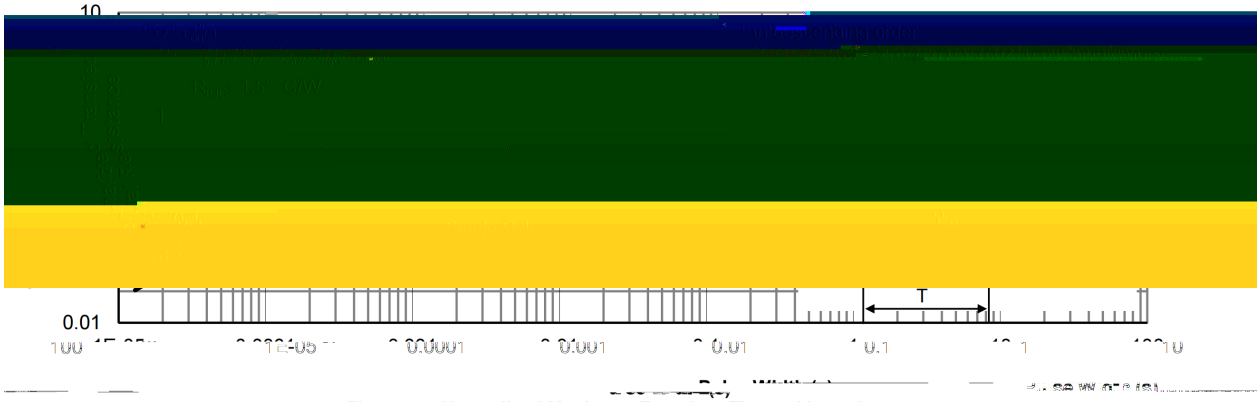
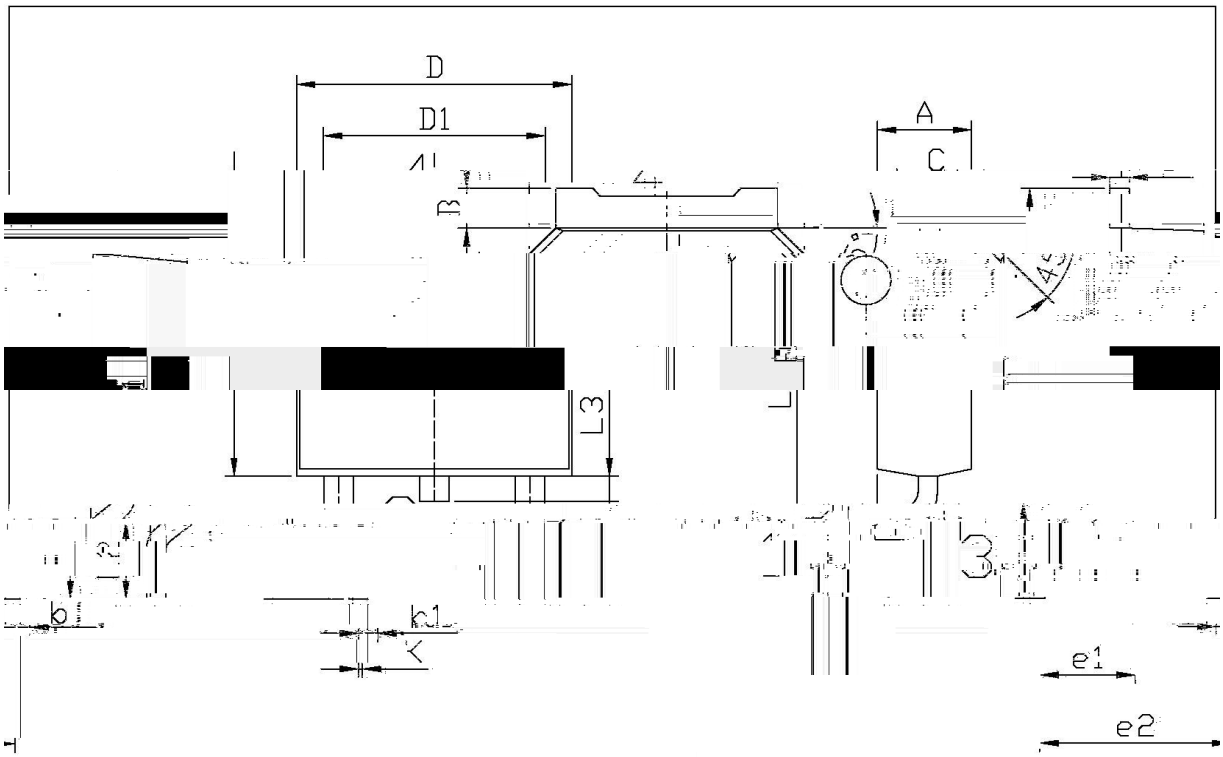


Figure 10: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions

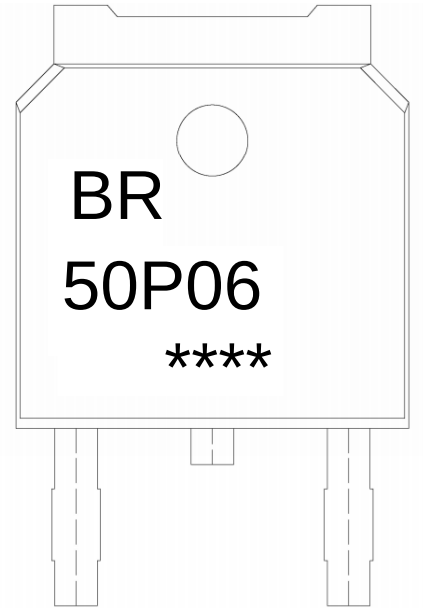


单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
E	5.95	6.25	A	2.20	2.40
e1	2.24	2.34	B	0.95	1.1
e2	4.42	4.72	b	0.70	0.90
L1	9.85	10.35	b1	0.45	0.55
C	0.45	0.55	L2	1.70	2.00
L3	0.60	0.90	D	6.45	6.75
L5	0.50	K	0.60	0.80	D1	5.10

TO-252

/ Marking Instructions



BR

50P06

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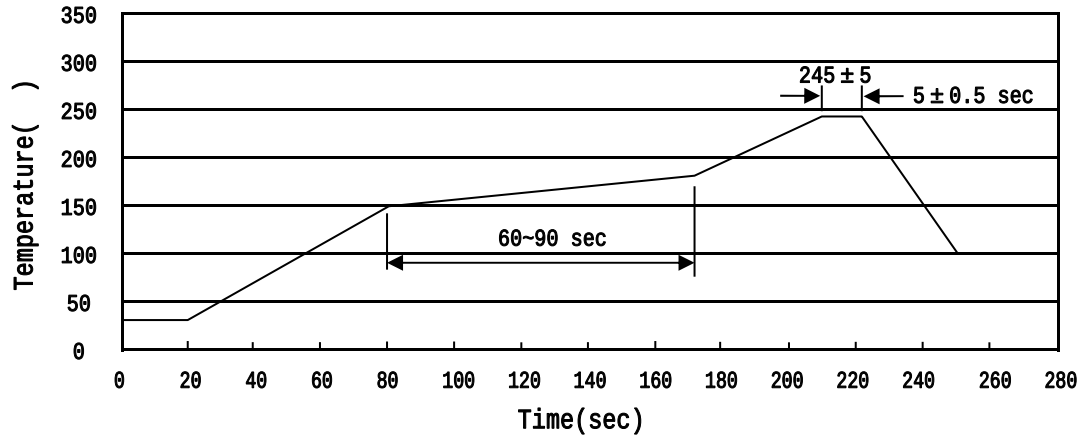
Note:

BR:	Company Code
50P06:	Product Type Code
****:	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	Units					Dimension (Unit: mm³)		
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner 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

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-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices