

/ Descriptions

TO-252

P

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

/ Features

 $V_{DS} (V) = -60V$ $I_D = -30A$ ($V_{GS} = \pm 20V$) $R_{DS(ON)} @ -10V \leq 35m\Omega$ (Typ. $26m\Omega$) $R_{DS(ON)} @ -4.5V \leq 50m\Omega$ (Typ. $31m\Omega$)

HF Product.

/ Applications

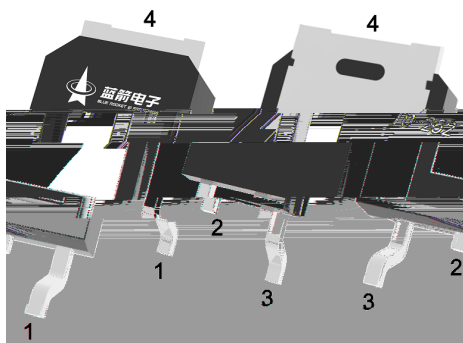
DC/DC

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_{DSS}	-60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	$I_D (T_c=25^{\circ}C)$	-30	A
Pulsed Drain Current	I_{DM}	-94.5	A
Avalanche Current	I_{AS}	-17.5	A
Avalanche energy $L=0.5mH$	E_{AS}	320	mJ
Power Dissipation for Single Operation	$P_D (T_c=25^{\circ}C)$	50	W
Maximum Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55 150	$^{\circ}C$
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	50	$^{\circ}C/W$
Thermal Resistance- Junction-to-Case	$R_{\theta JC}$	2.5	$^{\circ}C/W$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu A$ $V_{GS}=0V$	-60			V

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=-10V$ $V_{DS}=-30V$ $I_D=-6.2A$		46.5		nC
Total Gate Charge	$Q_{g(4.5V)}$			22.7		
Gate-Source Charge	Q_{gs}			9.1		
Gate-Drain Charge	Q_{gd}			9.2		
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS}=-10V$ $V_{DS}=-30V$ $R_L=4.7\Omega$ $R_{GEN}=3\Omega$		9.8		ns
Turn-on Rise Time	t_r			6.1		
Turn-off Delay Time	$t_{d(OFF)}$			44		
Turn-off Fall Time	t_f			12.7		

/ Electrical Characteristic Curve

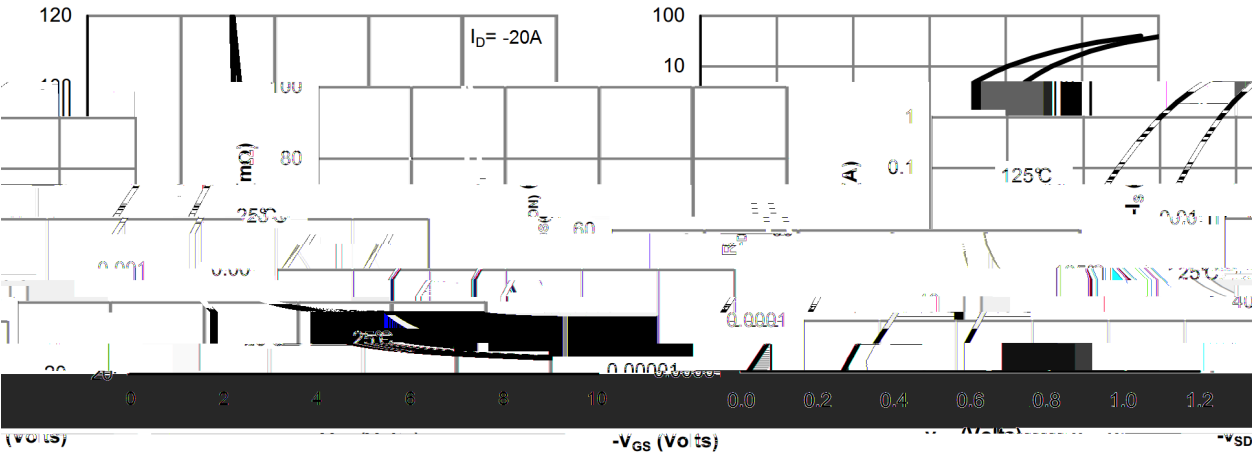
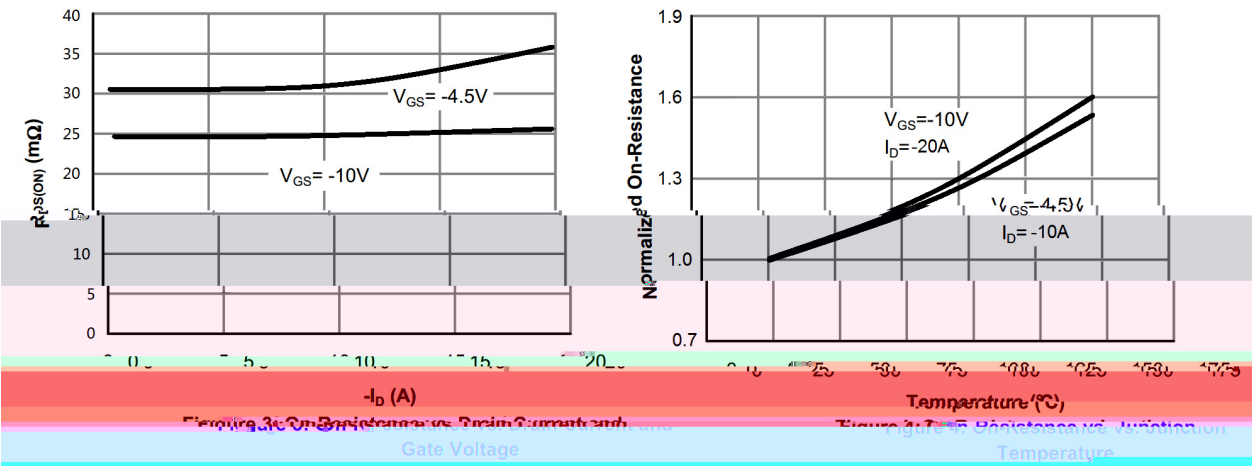
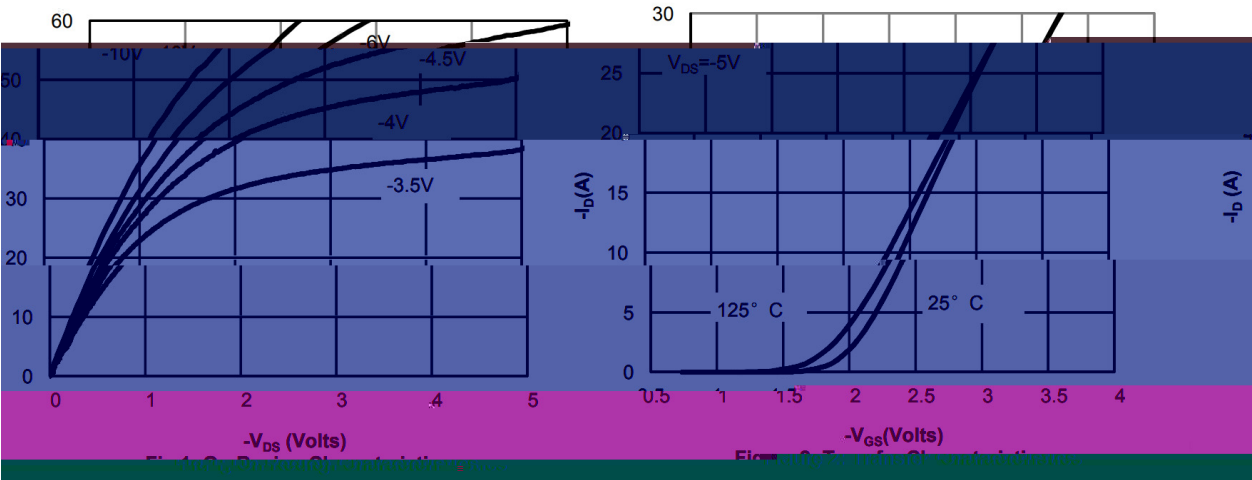


Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve

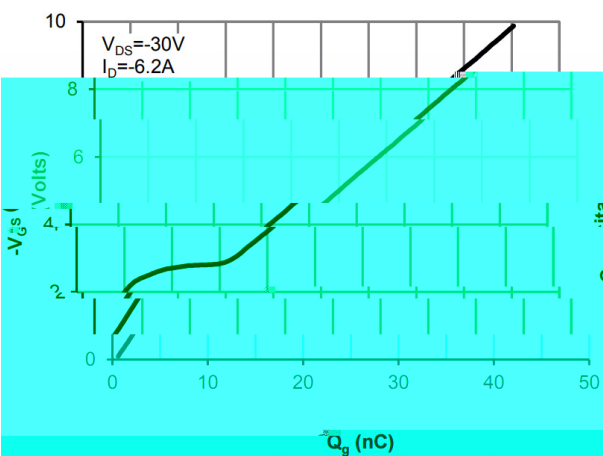


Figure 7: Gate-Charge Characteristics

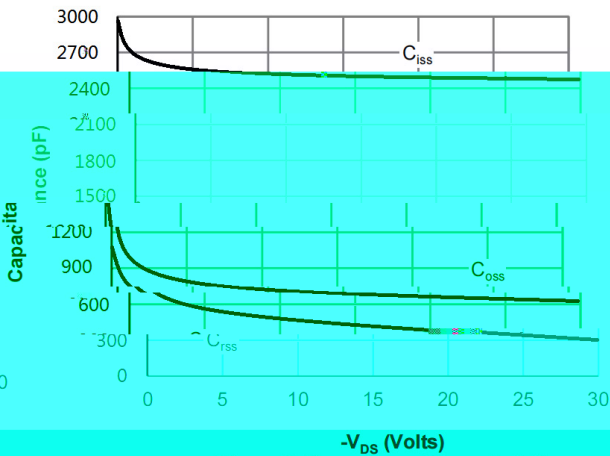


Figure 8: Capacitance Characteristics

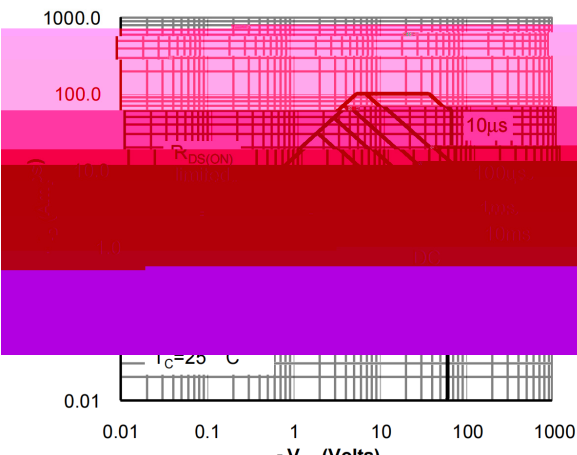
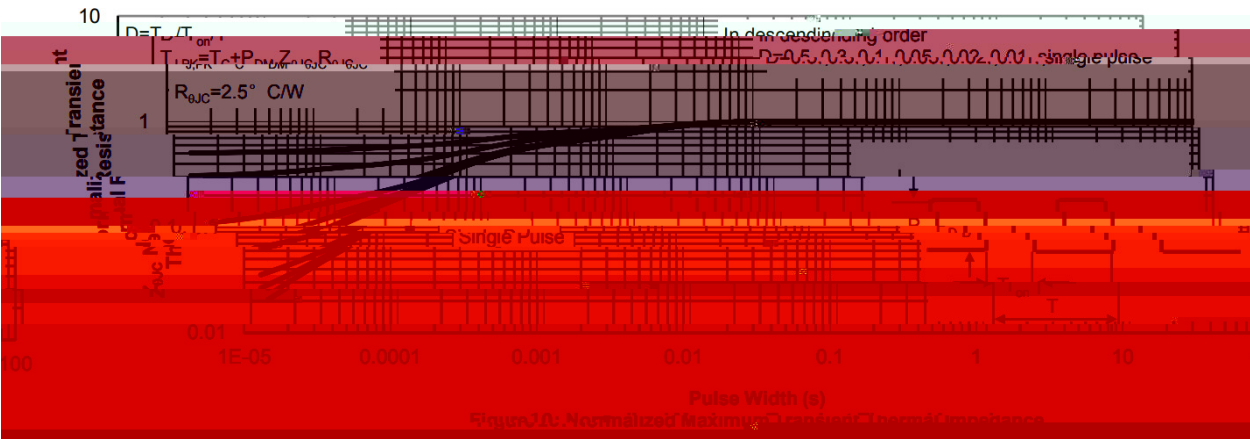
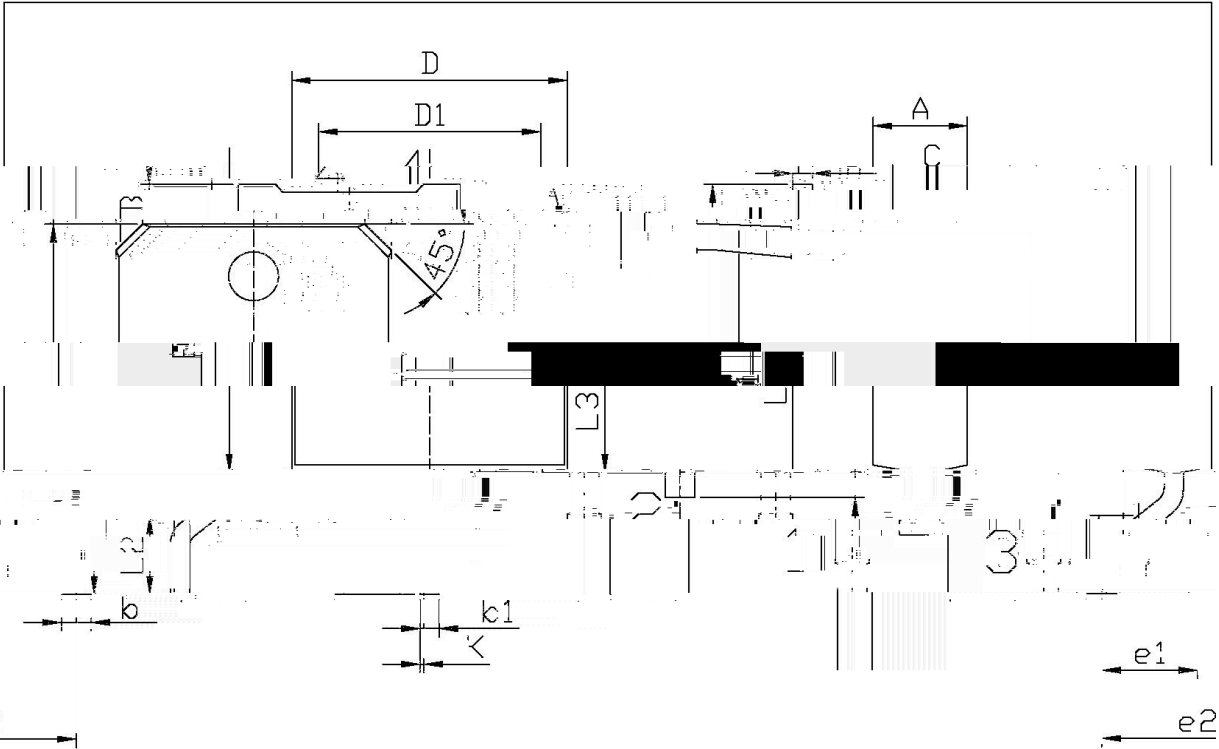


Figure 9: Maximum Forward Biased Safe Operating Area



/ Package Dimensions

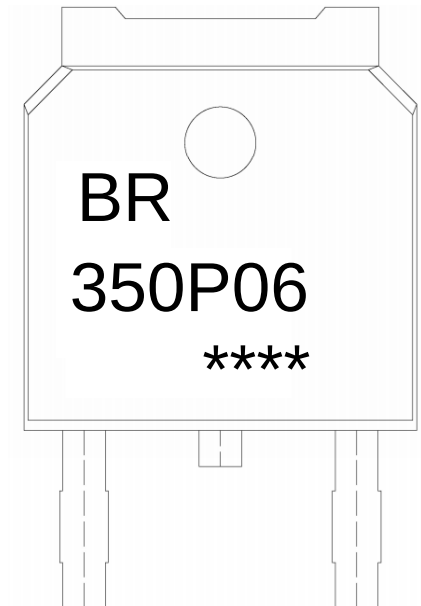


单位: mm

Symbol		Dimensions In Millimeters		Symbol		Dimensions In Millimeters	
		Min	Max			Min	Max
F		5.95	6.25	A		2.20	2.30
B		0.95	1.25	e1		2.24	2.34
b1		0.79	0.89	e2		9.85	10.35
c		0.45	0.55	L3		1.70	2.00
D		6.45	6.75	L2		0.60	0.90
D1		5.10	5.50	k1		0.00	0.10

T0-252

/ Marking Instructions



BR

350P06

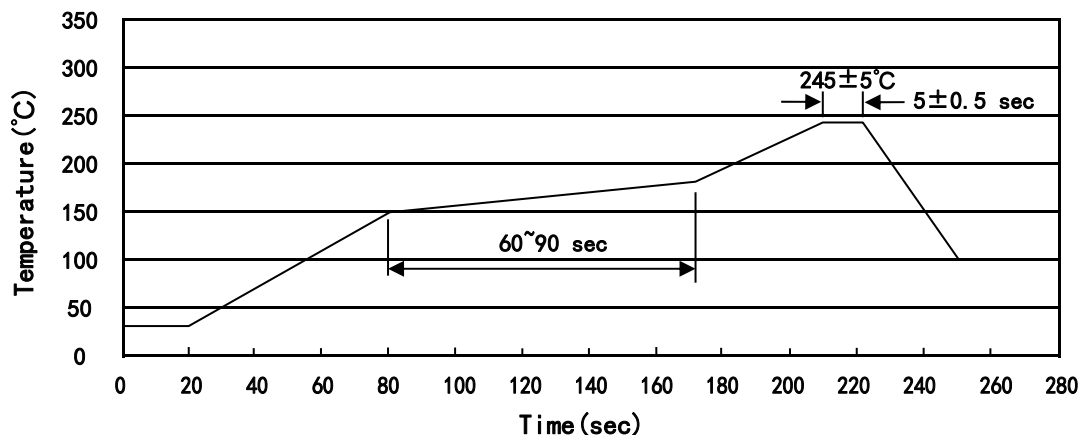
Note:

BR: Company Code

350P06: 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°C Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	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 mm ³)		
	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