

TO-252 P

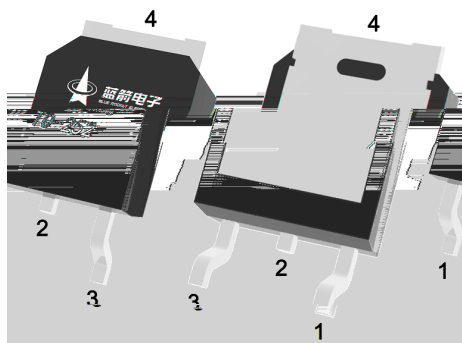
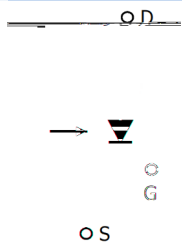
P-CHANNEL MOSFET in a TO-252 Plastic Package.

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

HF Product.

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.



PIN1 G

PIN 2 D

PIN 3 S

PIN 4 D

See Marking Instructions.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu\text{A}$ $V_{GS}=0\text{V}$	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60\text{V}$ $V_{GS}=0\text{V}$			-1.0	
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}$ $V_{GS}=\pm 20\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu\text{A}$	-1.0	-1.6	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-10\text{V}$ $I_D=-20\text{A}$		26	35	m Ω
		$V_{GS}=-4.5\text{V}$ $I_D=-10\text{A}$		31	50	
Diode Forward Voltage	V_{SD}	$I_S=-1\text{A}$ $V_{GS}=0\text{V}$			-1.0	V
Gate Resistance	R_g	$V_{GS}=0\text{V}$ $V_{DS}=0\text{V}$				

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		

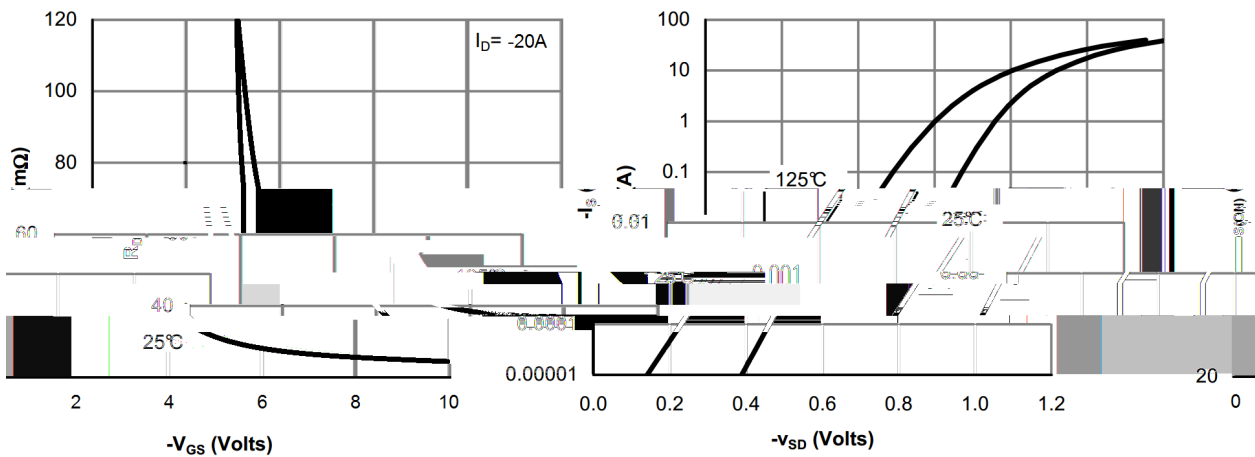
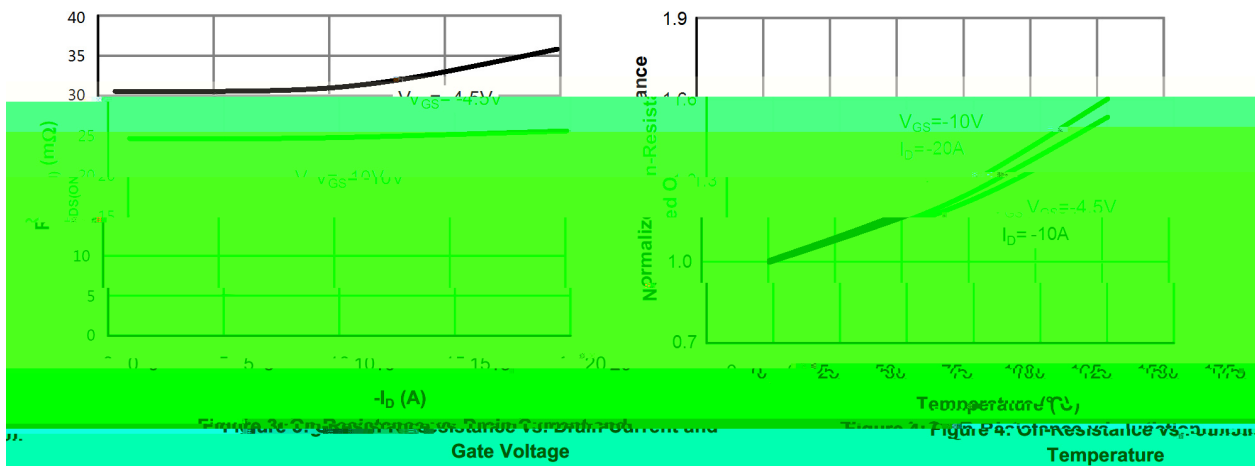
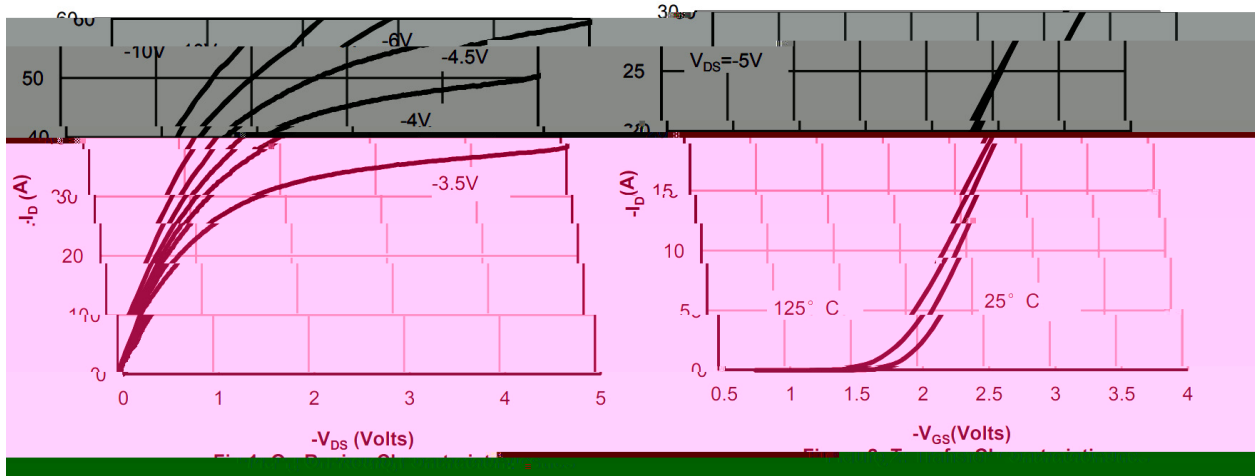


Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

Fi

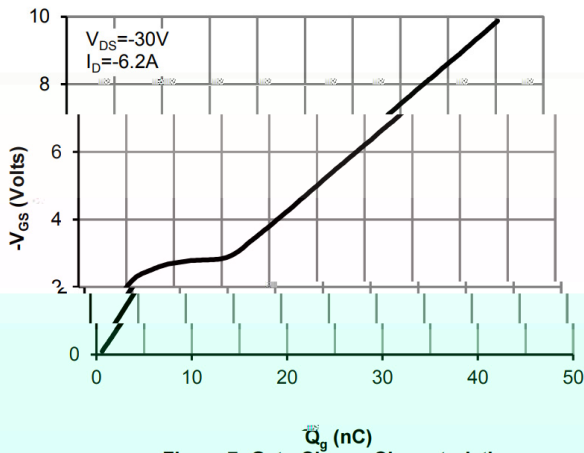


Figure 7: Gate-Charge Characteristics

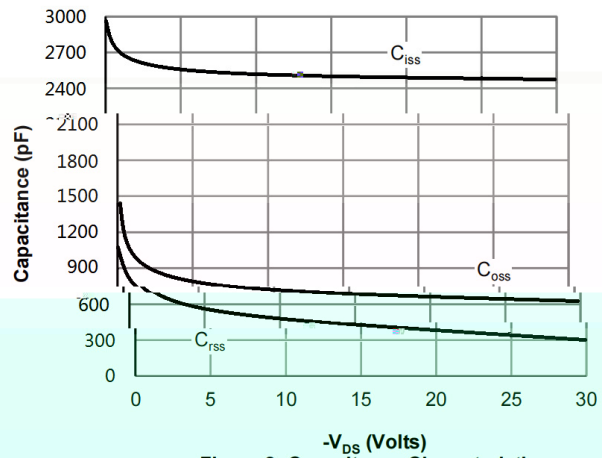


Figure 8: Capacitance Characteristics

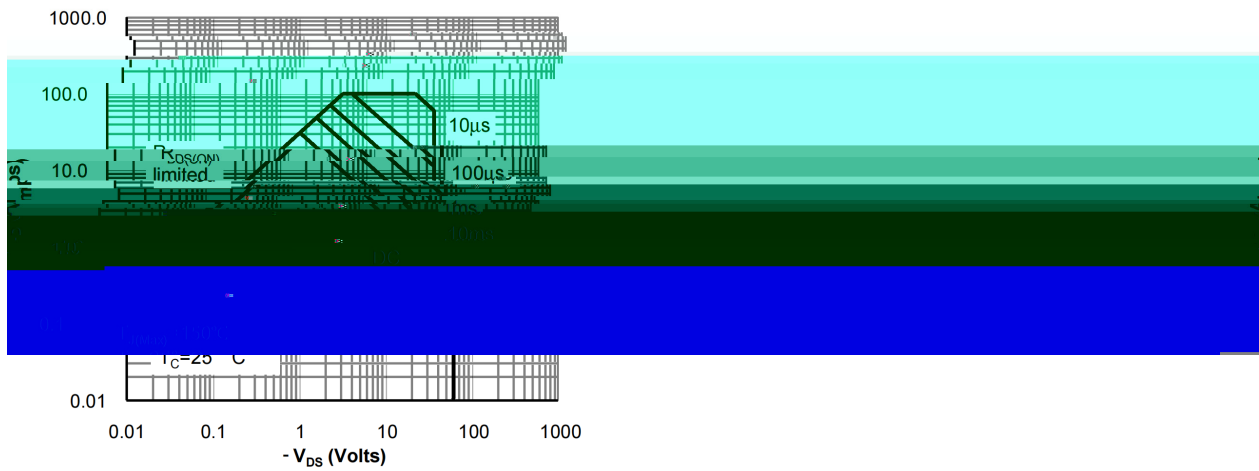


Figure 9: Maximum Forward Biased Safe Operating Area

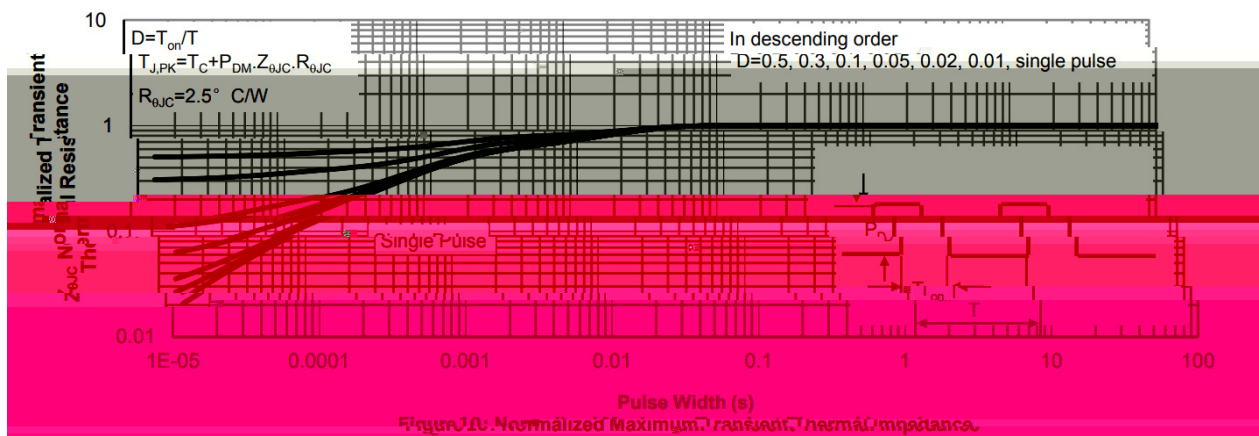
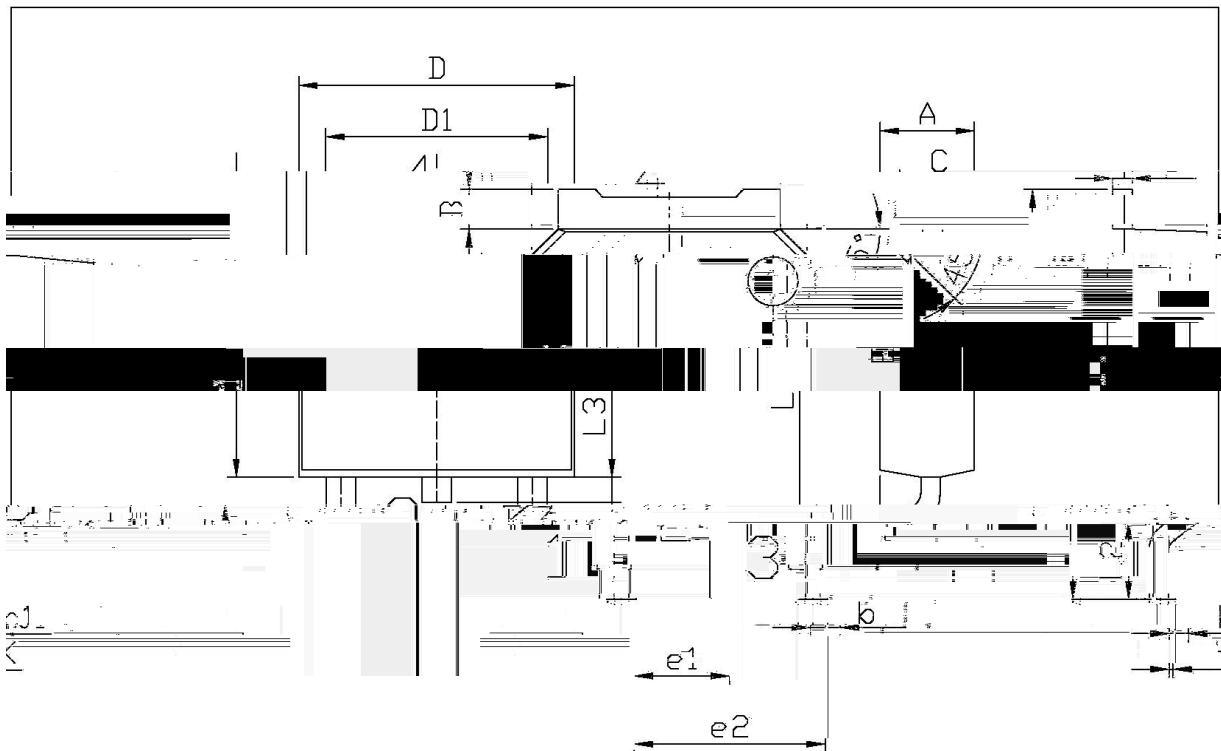


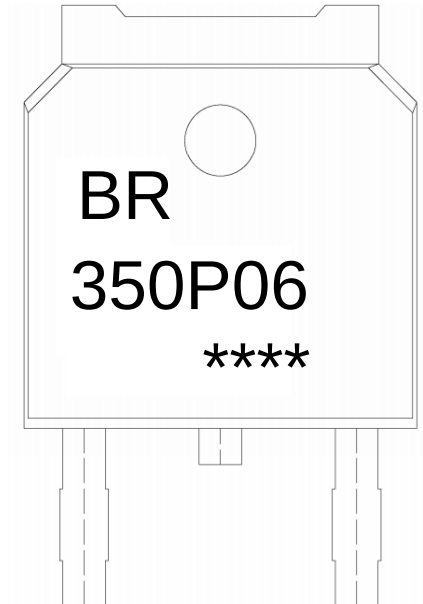
Figure 10: Normalized Maximum Transient Thermal Impedance



单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
6.25	A	2.20	2.40	E	5.95
2.34	B	0.95	1.25	e1	2.24
4.73	b1	0.70	0.85	e2	9.85
10.35	b2	0.45	0.55	e3	9.85
60	D	6.45	6.75	L3	0.50
100	D1	5.10	5.50	K	0.50

TO-252



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.

260±5

10±1 sec.

Temp.:260±5℃

Time:10±1 sec

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm³)		
	只 卷盘	卷盘 盒	只 盒	盒 箱	只 箱		盒	箱
TO-252	2,500	2	5,000	6	30,000	13 ×16	360×360×50	380×335×366

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm³)		
	只 套管	套管 盒	只 盒	盒 箱	只 箱	套管	盒	箱
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180