

Rev.A Apr.-2024

TO-252

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

$V_{DS} (V) = -60V$ $I_D = -14 A$ ($V_{GS} = 20V$)

$R_{DS(on)1@-10V}$ 100m (Type.83m)

$R_{DS(on)2@-4.5V}$ 130m (Type.100m)

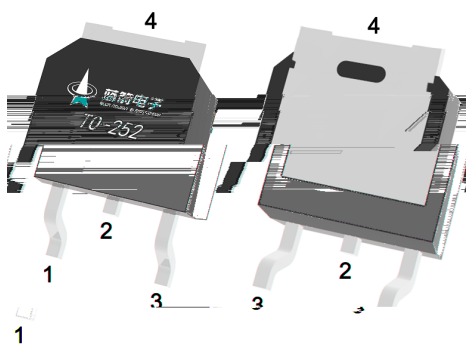
HF Product.

Motor Drive,Power Tools,LED Lighting.

— O.D. —



 S O



PIN1 G

PIN 2 D

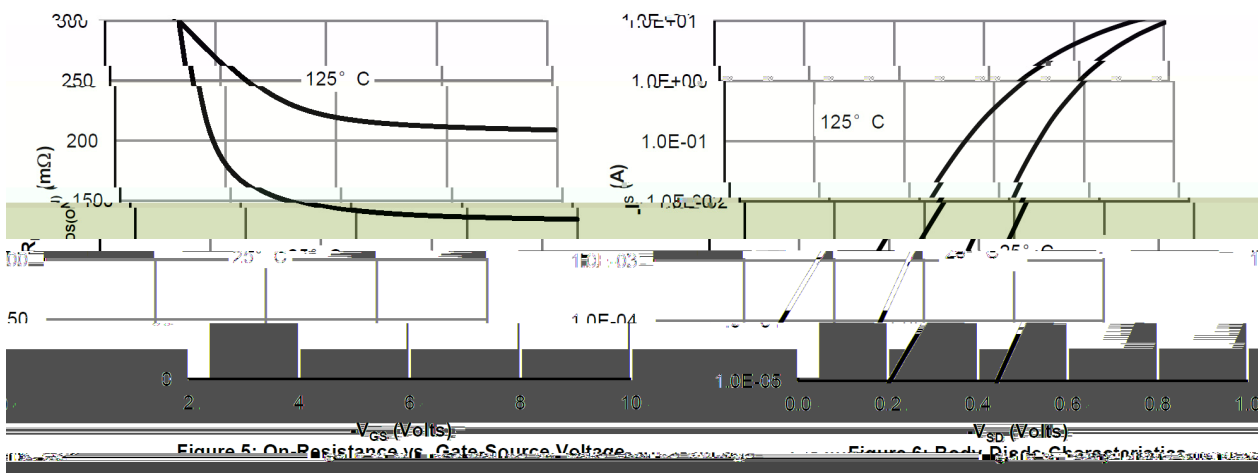
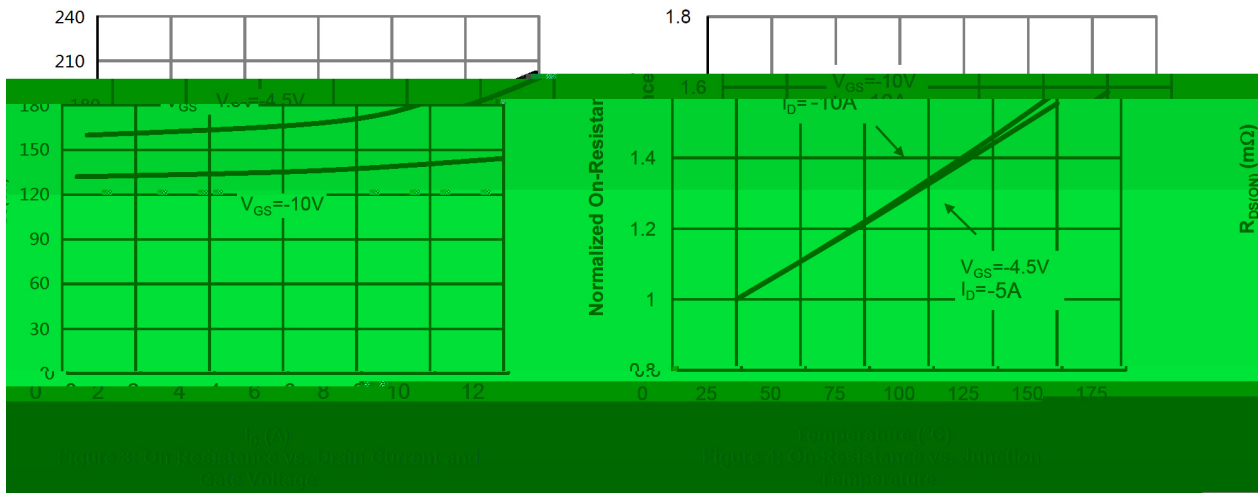
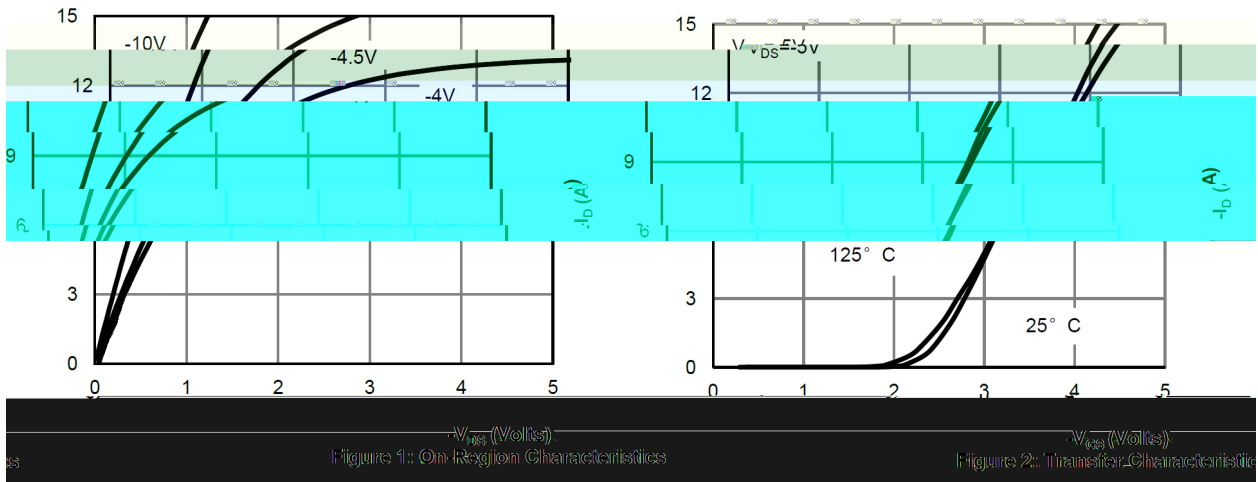
PIN 3 S

PIN 4 D

See Marking Instructions.

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-60	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	-14	A
Drain Current - Pulsed		I_{DM}	-42.5	A
Gate-Source Voltage		V_{GS}	± 20	V
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	32	W
Storage Temperature Range		T_{stg}	-55 ~ 150	
Thermal Resistance-Junction to Ambient	$t \leq 10s$	R_{JA}	28	/W
	Steady-State		55	
Thermal Resistance-Junction to Case	Steady-State	R_{JC}	3.91	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V$ $I_D=-250\mu A$	-60	-65		V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1	-1.6	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V$ $I_D=-10A$		83	100	m Ω
		$V_{GS}=-4.5V$ $I_D=-5A$		100	130	m Ω
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V$ $V_{GS}=0V$			-1.0	μA
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=-1A$ $T_J=25^\circ\text{C}$			-1.2	V
Gate resistance	R_g	$f=1MHz$		6.5		Ω
Input Capacitance	C_{iss}	$V_{DS}=-25V$ $V_{GS}=0V$ $f=1.0MHz$		890		pF
Output Capacitance	C_{oss}			90		
Reverse Transfer Capacitance	C_{rss}			64		
Total Gate Charge	$Q_{g(-10V)}$	$V_{DS}=-10V$ $V_{GS}=-10.0V$ $I_D=-3A$		12.3		nC
Total Gate Charge	$Q_{g(-4.5V)}$			6.3		
Gate-to-Source Charge	Q_{gs}			1.6		
Gate-to-Drain Charge	Q_{gd}			2.4		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-10V$ $R_L=5.4\Omega$ $V_{GS}=-10V$ $R_{GEN}=3\Omega$		12		ns
Turn-On Rise Time	t_r			20		
Turn-Off Delay Time	$t_{d(off)}$			20		
Turn-Off Fall Time	t_f			25		



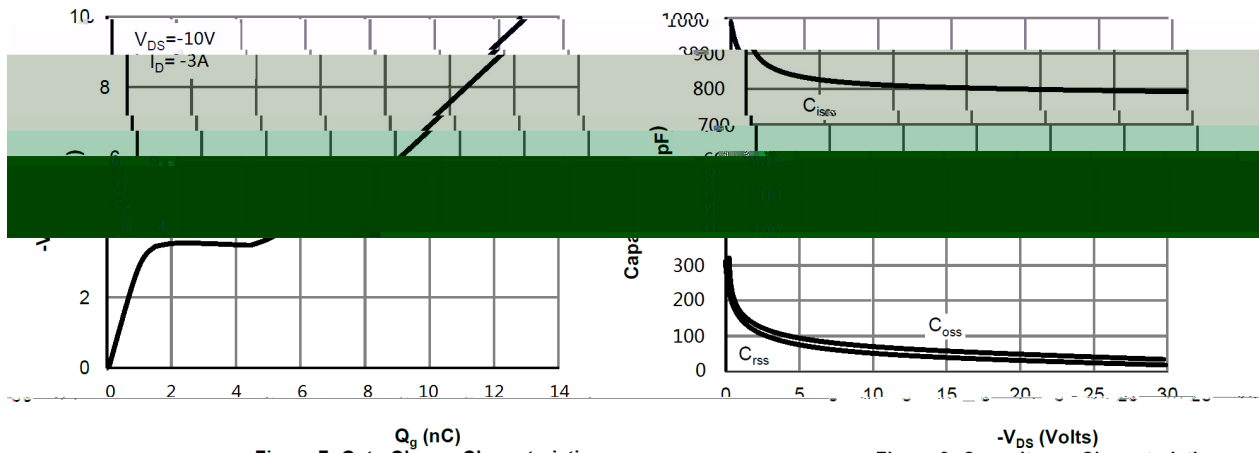


Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

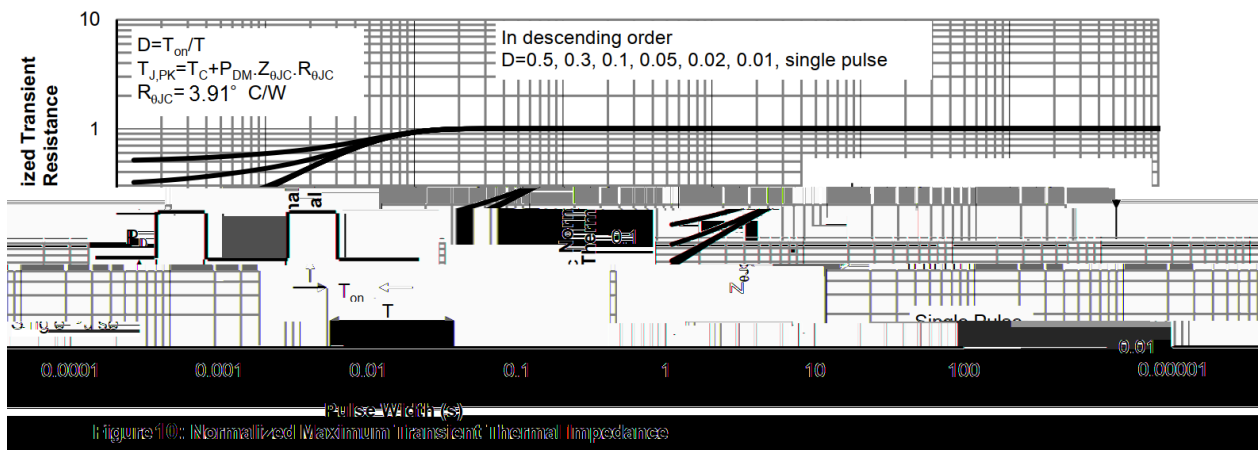
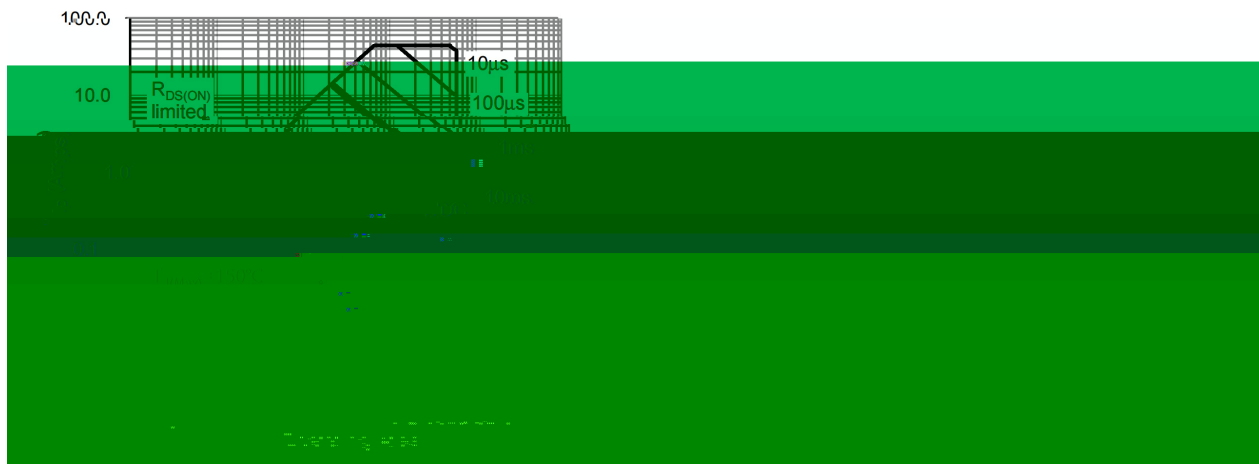
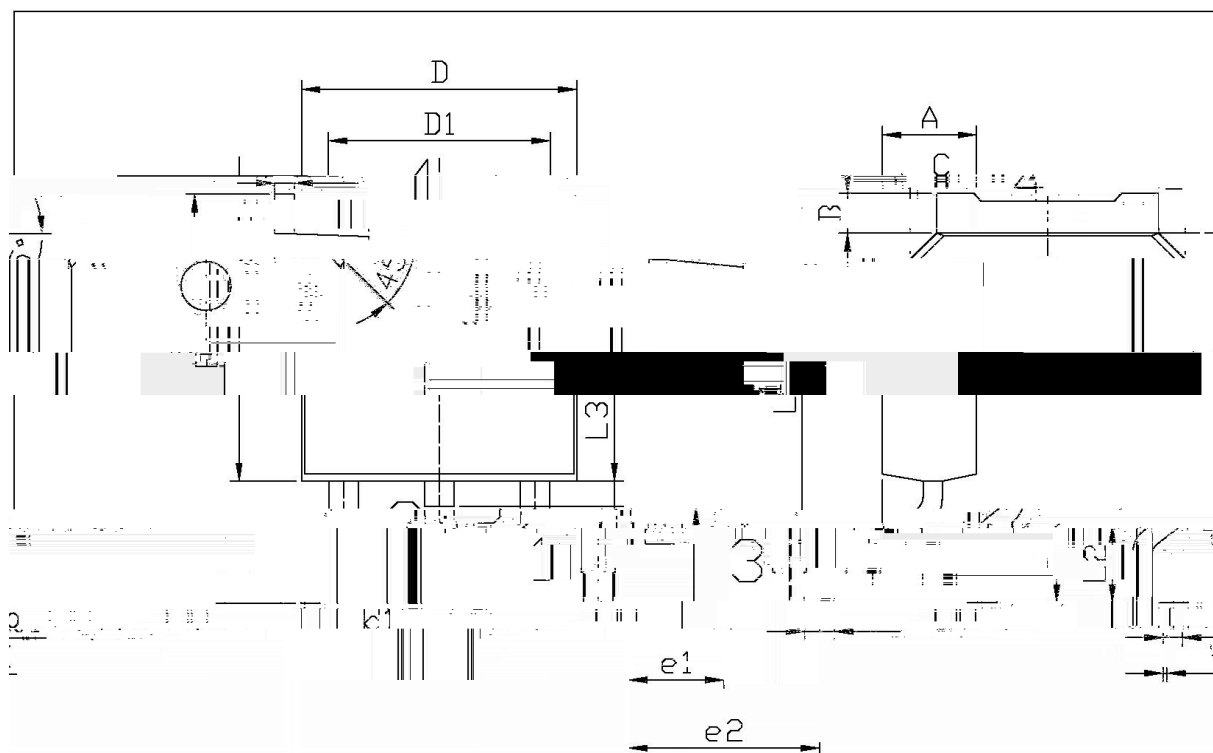


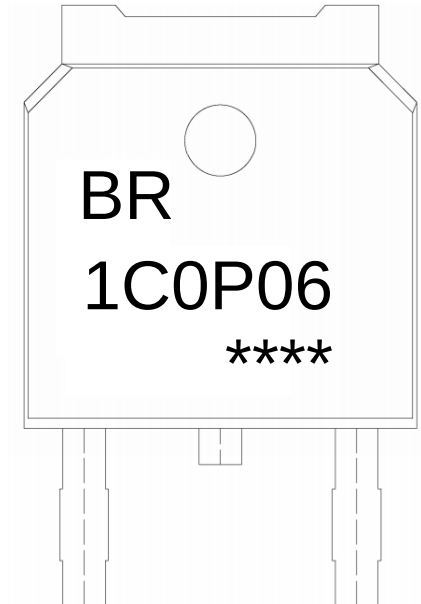
Figure 10: Normalized Maximum Transient Thermal Impedance



单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
5.95	6.25		A	2.20	2.40
2.24	2.34		B	0.95	1.25
4.43	4.72		C	0.70	0.90
9.85	10.35		e1	0.45	0.55
			e2	1.70	2.00
L3	0.60	0.90	D1	6.45	6.75
50	0.00	0.10	D1	5.10	5.5

□-252



BR

1C0P06

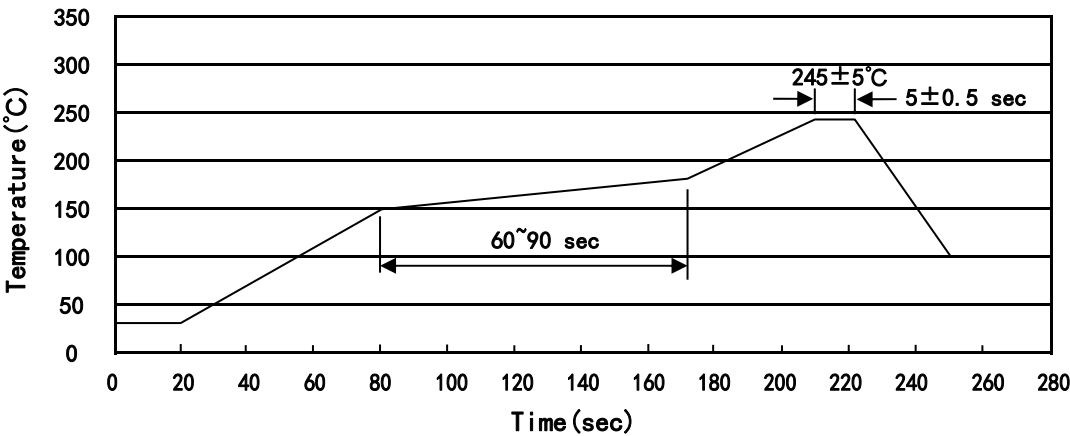
Note:

BR: Company Code

1C0P06: 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	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