

/ Descriptions

TO-252 N MOS N-CHANNEL MOSFET in a TO-252 Plastic Package.

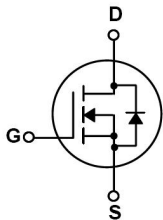
/ Features

Low gate charge, low crss, fast switching.

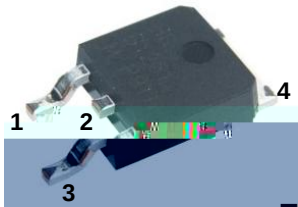
/ Applications

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 D PIN 3 S PIN 4 D

/ h_{FE} Classifications & Marking

See Marking Instructions.

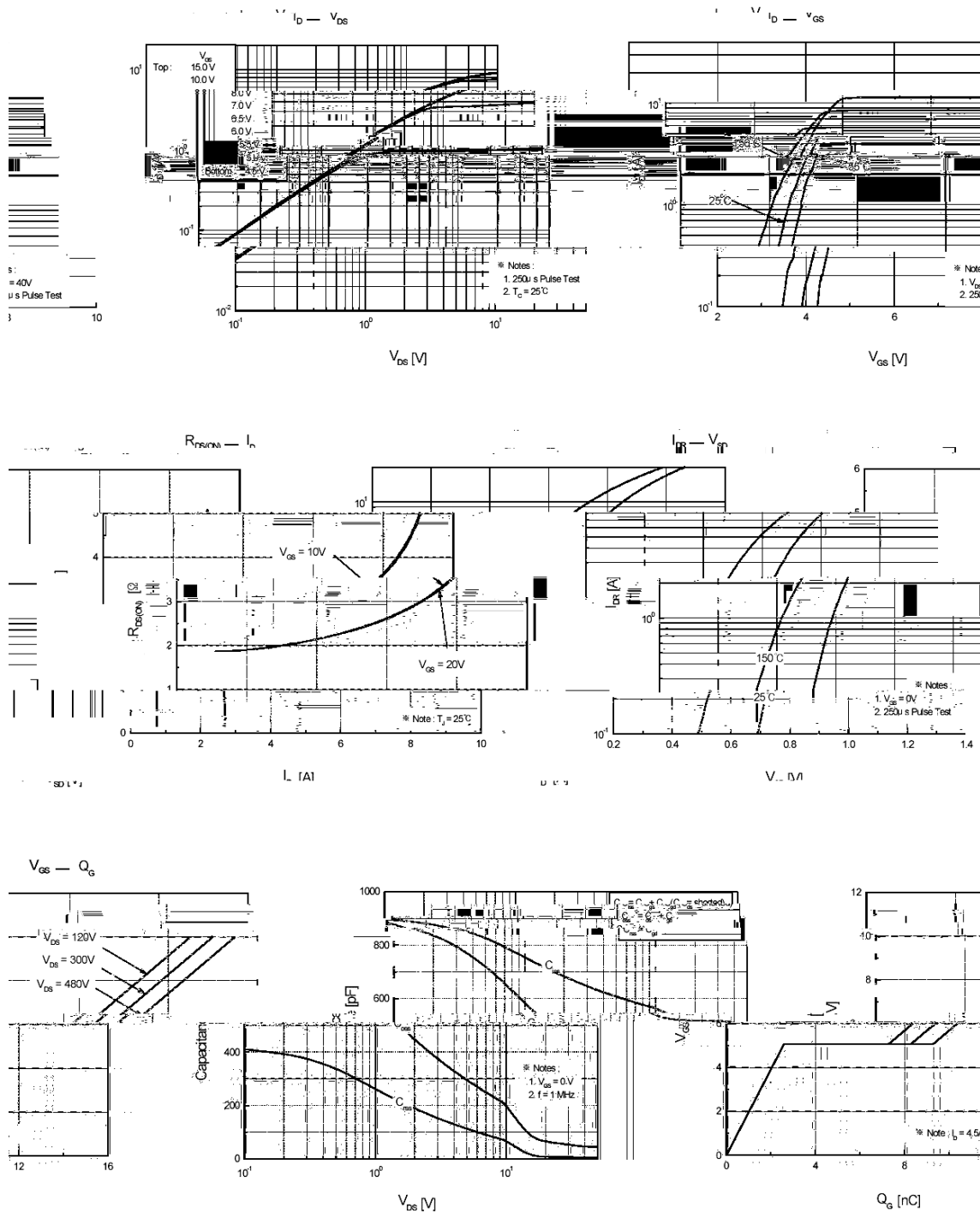
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	600	V
Drain Current	$I_D(T_C=25)$	5.0	A
Drain Current	$I_D(T_C=100)$	2.6	A
Drain Current - Pulsed	I_{DM}	18	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	210	mJ
Repetitive Avalanche Energy	E_{AR}	10	mJ
Avalanche Current	I_{AR}	4.5	A
Power Dissipation	$P_D(T_C=25)$	35	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	

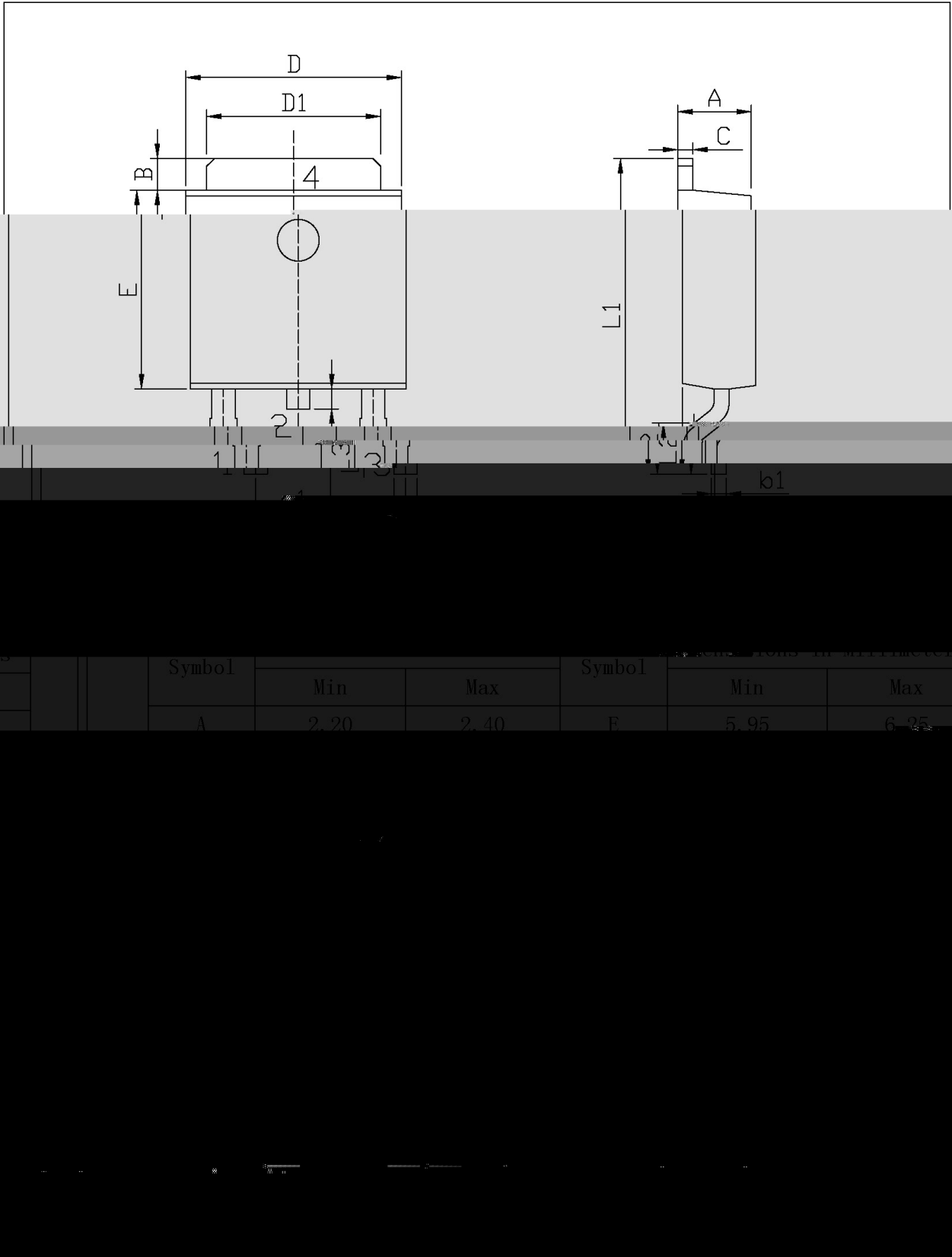
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250\mu A$	600			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=600V$ $V_{GS}=0V$			1.0	μA
		$V_{DS}=480V$ $T_C=125$			10	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.0		4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=2.25A$		2.0	2.5	Ω
Forward Transconductance	g_{FS}	$V_{DS}=40V$ $I_D=2.25A$		4.7		S
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=4.5A$			1.4	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		515	670	pF
Output Capacitance	C_{oss}			55	72	pF
Reverse Transfer Capacitance	C_{rss}			6.5	8.5	pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=300V$ $I_D=4.5A$ $R_G=25\Omega$		10	30	ns
Turn-On Rise Time	t_r			42	90	ns
Turn-Off Delay Time	$t_{d(off)}$			38	85	ns
Turn-Off Fall Time	t_f			46	100	ns

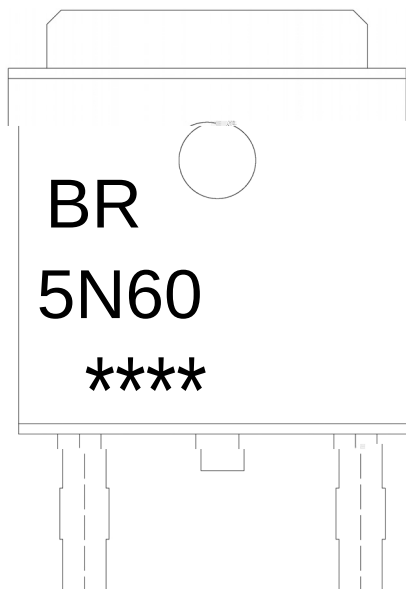
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

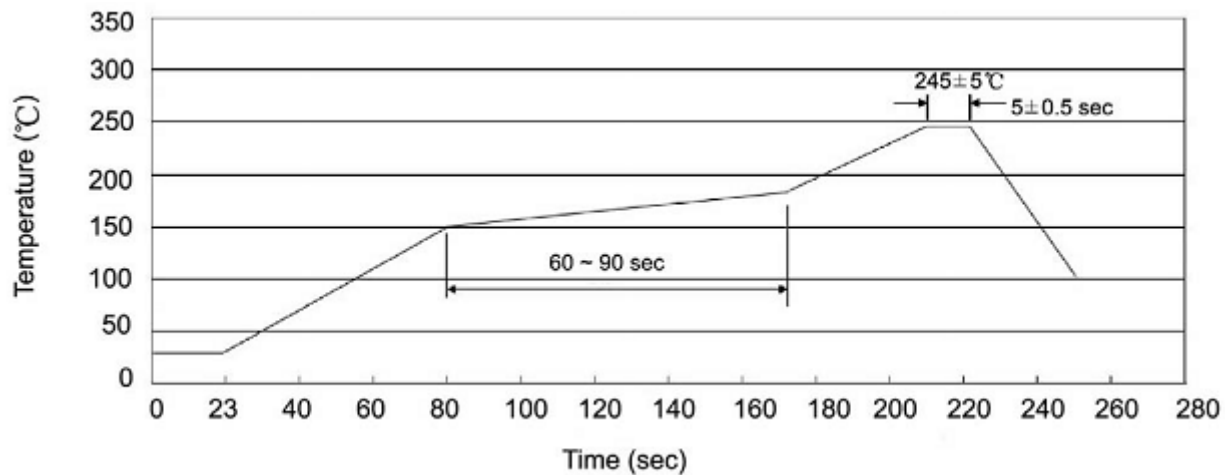
Note:

BR: Company Code

5N60: Product Type.

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

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



Note:

- | | | | | | |
|---|-----|-----|----|----------|---|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , 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 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	5	25,000	13 ×16	360×360×50	385×257×392

/ **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**