

## Descriptions

This 20V 11A is P-channel enhancement mode field effect transistor in a DFN 2 × 2B-6L plastic package.

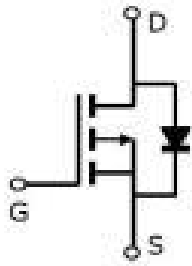
## Features

- $V_{DS} (V) = -20V$
- $I_D = -11A$
- $R_{DS(ON)}@-4.5V \leq 17m\Omega$  (Type. 15m $\Omega$ )
- Halogen-Free Product

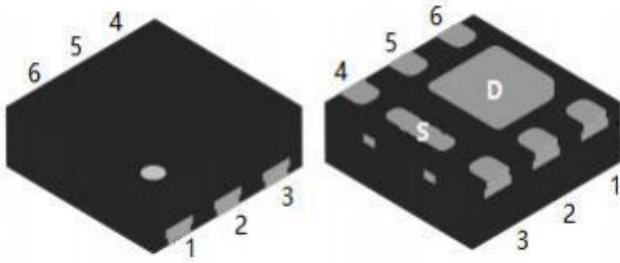
## Applications

- Power management in notebook computer,
- Portable equipment and battery powered systems.

## Equivalent Circuit



## Pinning



Pin1	D
Pin2	D
Pin3	G
Pin4	S
Pin5	D
Pin6	D

## Marking

See Marking Instructions

## Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		$V_{DSS}$	-20	V
Gate-Source Voltage		$V_{GSS}$	±12	V
Continuous Drain Current		$I_D (T_a=25^\circ\text{C})$	-11	A
Pulsed Drain Current		$I_{DM}$	-44	A
Avalanche Current		$I_{AS}$	13	A
Avalanche energy L=0.5mH		$E_{AS}$	59	mJ
Power Dissipation for Single Operation		$P_D (T_a=25^\circ\text{C})$	3.0	W
Maximum Junction Temperature		$T_j$	150	°C
Storage Temperature Range		$T_{stg}$	-55 ~ 150	°C
Thermal Resistance- Junction to Ambient	≤10s	$R_{\theta JA}$	40	°C/W
	Steady State		75	°C/W

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D=-250\mu A$ $V_{GS}=0V$	-20	-23		V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-20V$ $V_{GS}=0V$			-1.0	$\mu A$
Gate-Body leakage current	$I_{GSS}$	$V_{DS}=0V$ $V_{GS}=\pm 12V$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-0.4	-0.7	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-4.5V$ $I_D=-10A$		15	17	m $\Omega$
		$V_{GS}=-2.5V$ $I_D=-5A$		19	25	
		$V_{GS}=-1.8V$ $I_D=-1A$		27	38	
Diode Forward Voltage	$V_{SD}$	$I_S=-1A$ $V_{GS}=0V$			-1.2	V
Total Gate Charge	$Q_g$	$V_{GS}=-4.5V$ $V_{DS}=-6V$ $I_D=-8A$		12.7		nC
Gate-Source Charge	$Q_{gs}$			1.7		
Gate-Drain Charge	$Q_{gd}$			3.4		
Gate resistance	$R_g$	$V_{GS}=0V, V_{DS}=0V,$ $f=1MHz$		13.5		
Input Capacitance	$C_{iss}$	$V_{GS}=0V$ $V_{DS}=-20V$ $f=1MHz$		2550		pF
Output Capacitance	$C_{oss}$			205		
Reverse Transfer Capacitance	$C_{rss}$			190		
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS}=-4.5V$ $V_{DS}=-6V$ $R_L=0.75\Omega$ $R_{GEN}=3\Omega$		11		ns
Turn-on Rise Time	$t_r$			25		
Turn-off Delay Time	$t_{d(OFF)}$			70		
Turn-off Fall Time	$t_f$			41.5		

Electrical Characteristic Curve

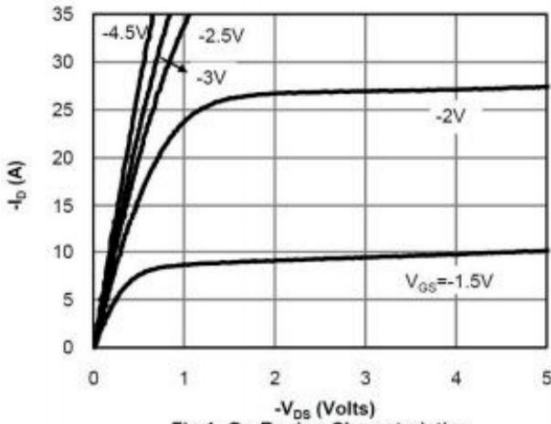


Fig 1: On-Region Characteristics

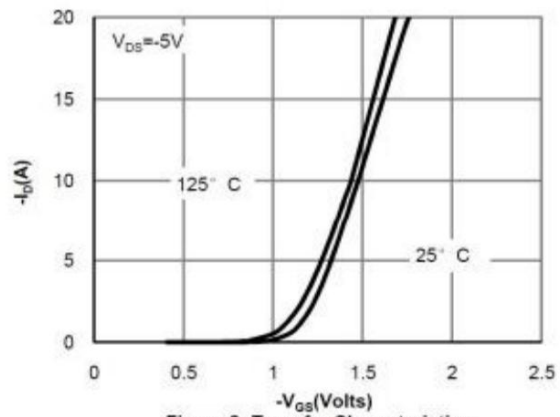


Figure 2: Transfer Characteristics

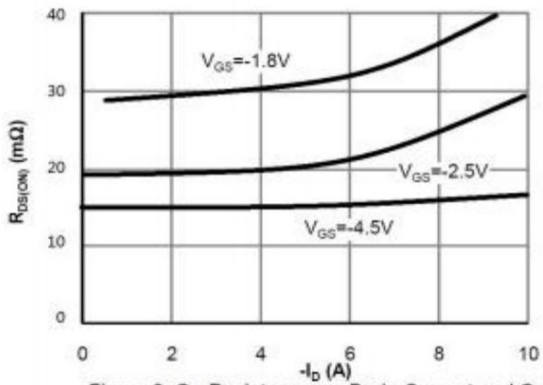


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

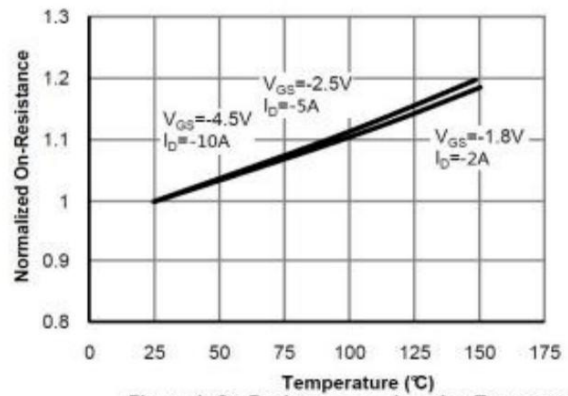


Figure 4: On-Resistance vs. Junction Temperature

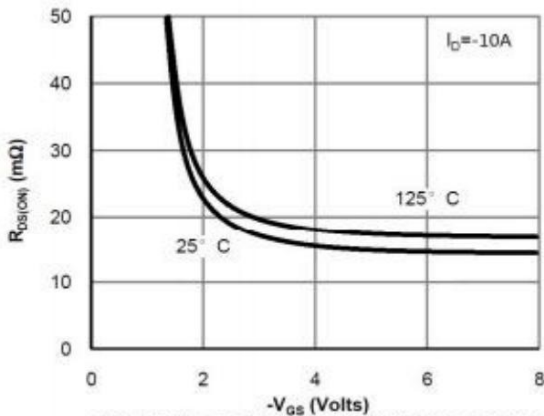


Figure 5: On-Resistance vs. Gate-Source Voltage

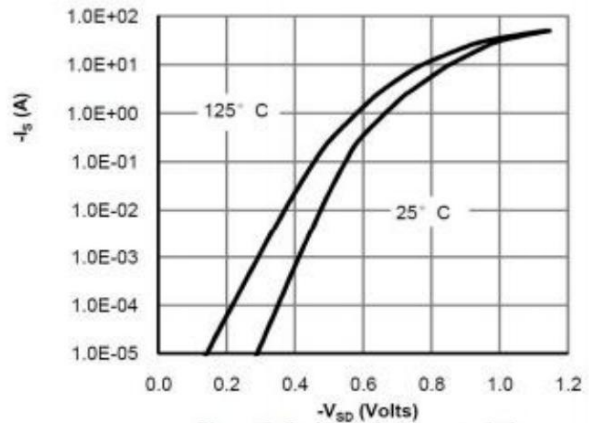


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

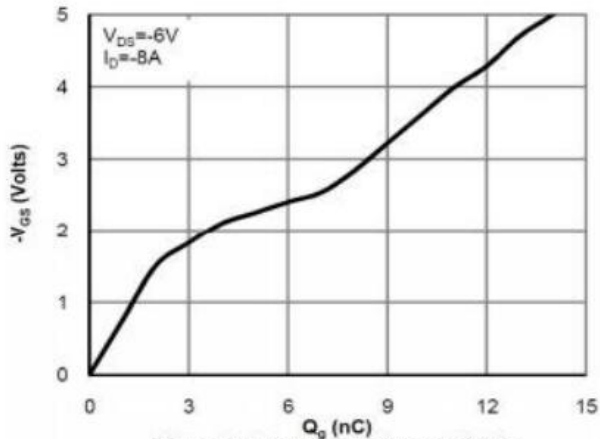


Figure 7: Gate-Charge Characteristics

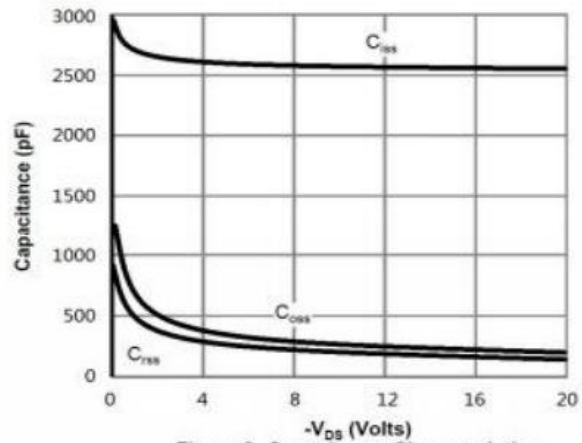


Figure 8: Capacitance Characteristics

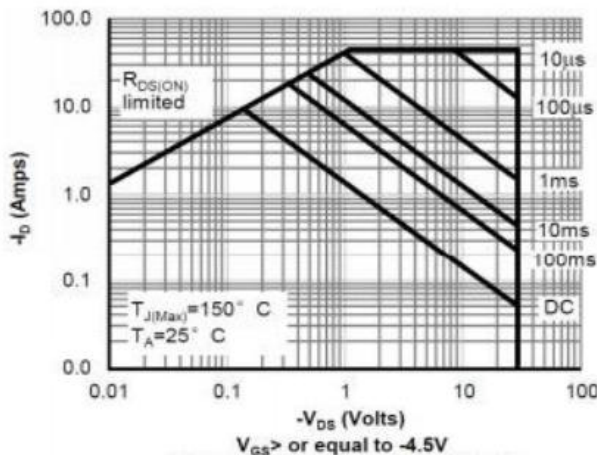


Figure 9: Maximum Forward Biased Safe Operating Area

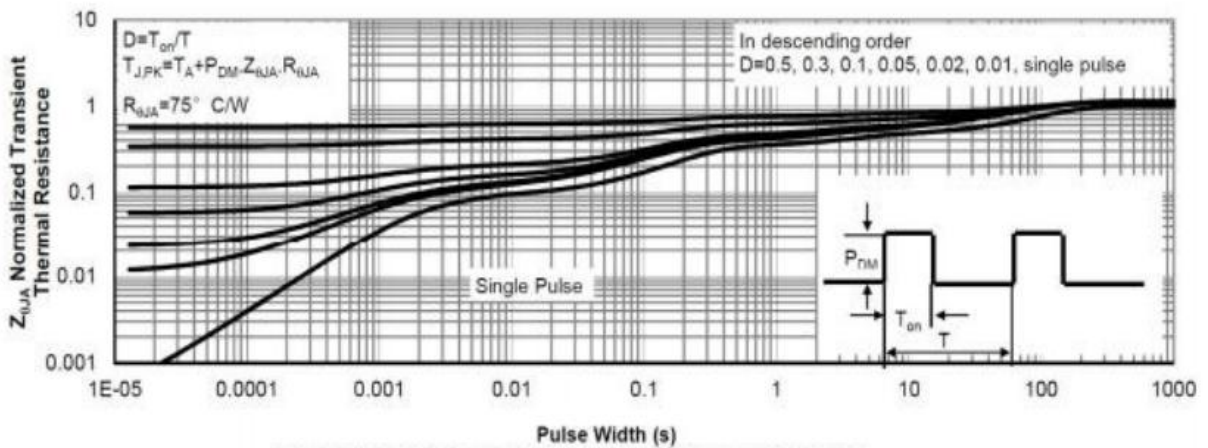


Figure 10: Normalized Maximum Transient Thermal Impedance

**Marking Instructions**



Note:  
 COT: Company Code  
 150P02: Product Type  
 \*\*\*\*: Lot No. Code, code change with Lot No

**Packaging SPEC**

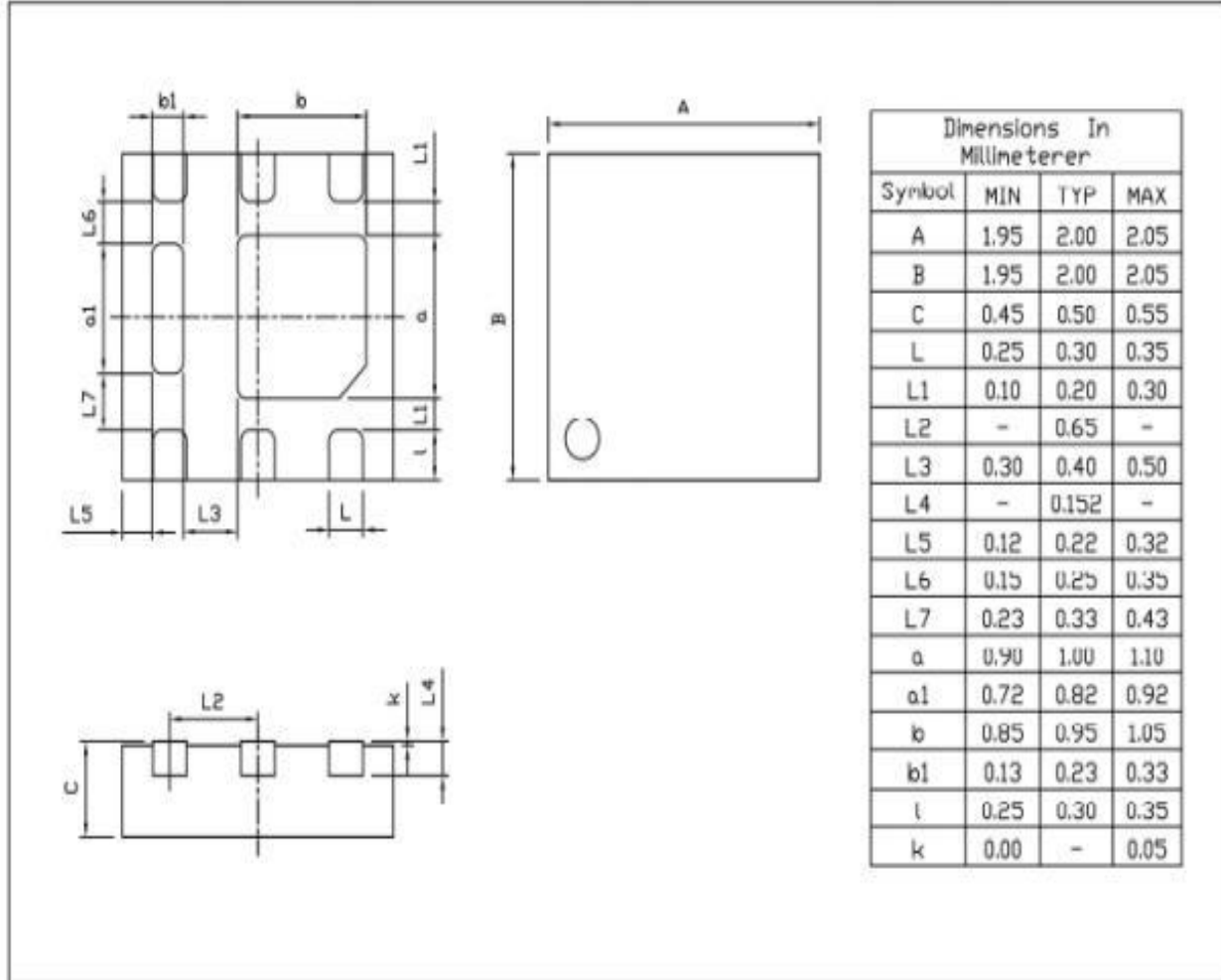
REEL INFORMATION

Package Type	Units					Dimension (unit: mm <sup>3</sup> )		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
DFN 2×2B-6L	4,000	10	40,000	4	160,000	7" ×8	210×205×205	445×230×435

**Package Outline Dimensions**

DFN2x2B-6L-0.5

Unit:mm



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