

# DPSS84

## DPSS84 P-Channel MOSFET

### General description

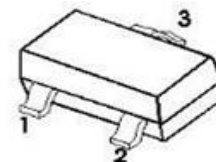
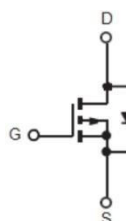
P-Channel Enhancement Mode Field Effect Transistor

### Features:

- $V_{DS} : -50V$
- $I_D : -0.13A$
- $R_{DS(ON)}( \text{ at } V_{GS}=-10V ) < 8 \text{ ohm}$
- $R_{DS(ON)}( \text{ at } V_{GS}=-4.5V ) < 10 \text{ ohm}$
- Trench Power LV MOSFET technology
- Low RDS(ON)
- Low Gate Charge

### Applications :

- Video monitor
- Power managemen



1. Gate
2. Source
3. Drain

Package : SOT-23

Device Type	Device Marking
DPSS84	B84

### Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Parameter	Symbol	Maximum	Unit
Drain-source Voltage	$V_{DS}$	-50	V
Gate-source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current	$I_D$	-0.13	A
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	-0.68	A
Total Power Dissipation @ $T_A=25^\circ C$	$P_D$	225	mW
Thermal Resistance Junction-to-Ambient <sup>B</sup>	$R_{\theta JA}$	556	$^\circ C / W$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	$^\circ C$

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## Electrical Characteristics ( $T_J=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-50			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-50V, V_{GS}=0V, T_C=25^\circ\text{C}$			-1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}= \pm 20V, V_{DS}=0V$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}= V_{GS}, I_D=-250\mu A$	-0.9	-1.4	-2.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}= -10V, I_D=-0.13A$		4.0	8	$\Omega$
		$V_{GS}= -4.5V, I_D=-0.1A$		4.2	10	
Diode Forward Voltage	$V_{SD}$	$I_S=-0.13A, V_{GS}=0V$			-1.2	V
Maximum Body-Diode Continuous Current	$I_S$				-0.17	A
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-30V, V_{GS}=0V, f=1\text{MHz}$		30		pF
Output Capacitance	$C_{oss}$			10		
Reverse Transfer Capacitance	$C_{rss}$			5		
<b>Switching Parameters</b>						
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-4.5V, V_{DD}=-30V, I_D=-0.15A, R_{GEN}=2.5\Omega$		2.5		ns
Turn-on Rise Time	$t_r$			1		
Turn-off Delay Time	$t_{D(off)}$			16		
Turn-off Fall Time	$t_f$			8		

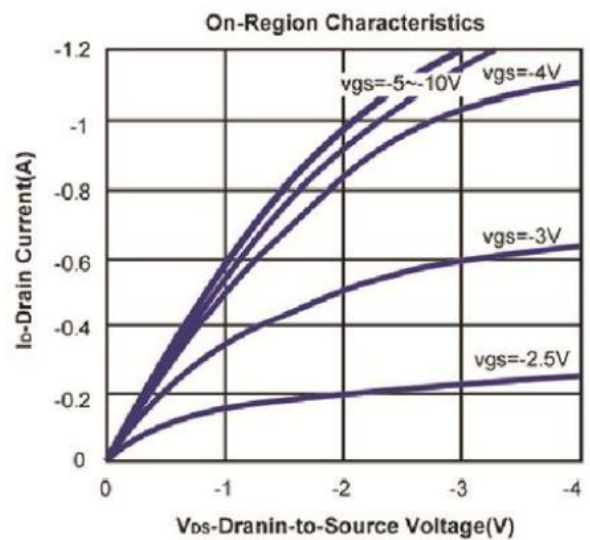
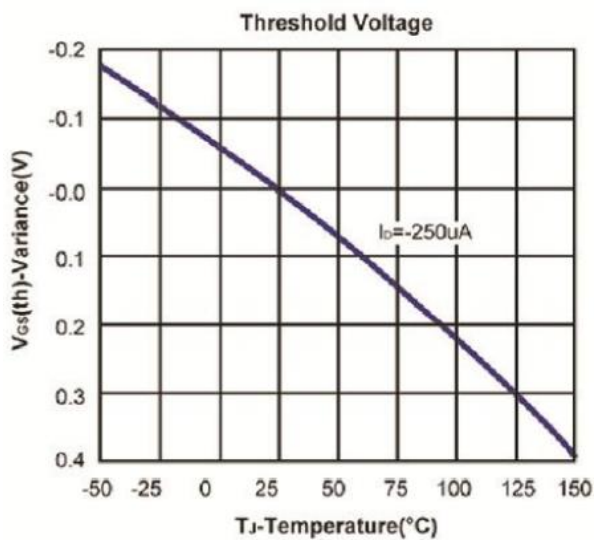
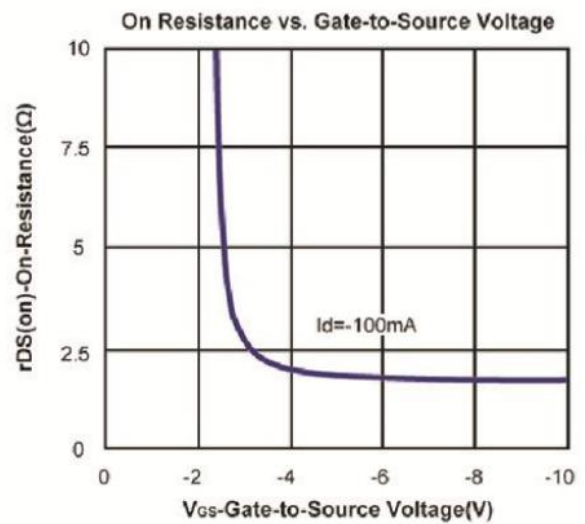
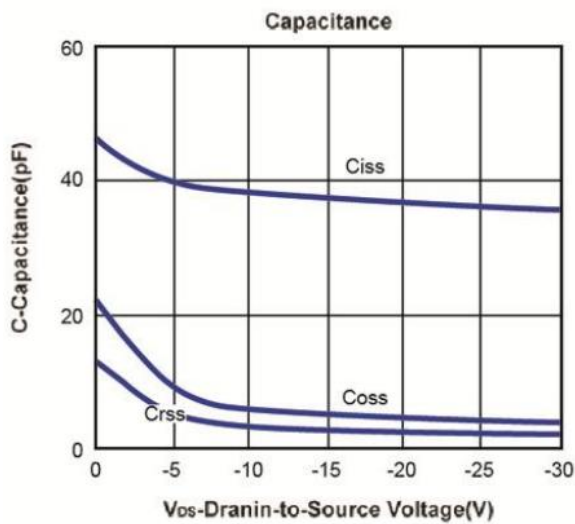
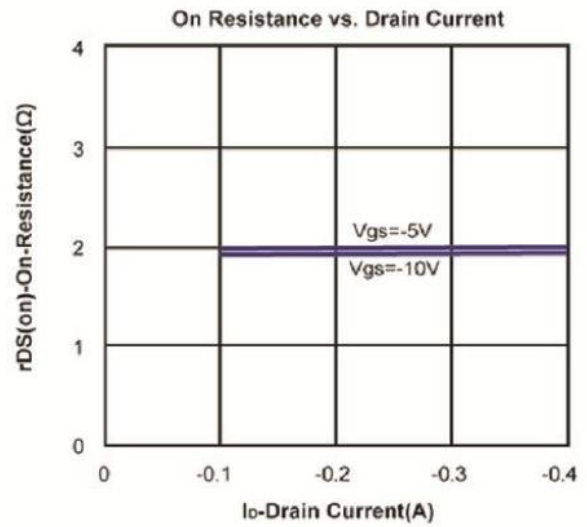
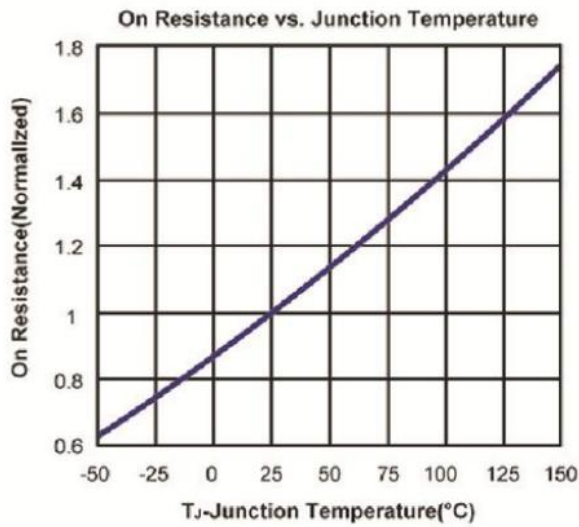
Note:

- A. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty cycle  $\leq 2\%$ .  
 B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.



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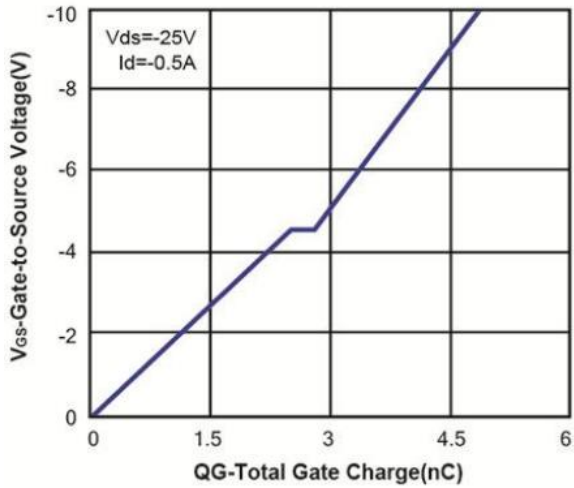
## Typical Performance Characteristics



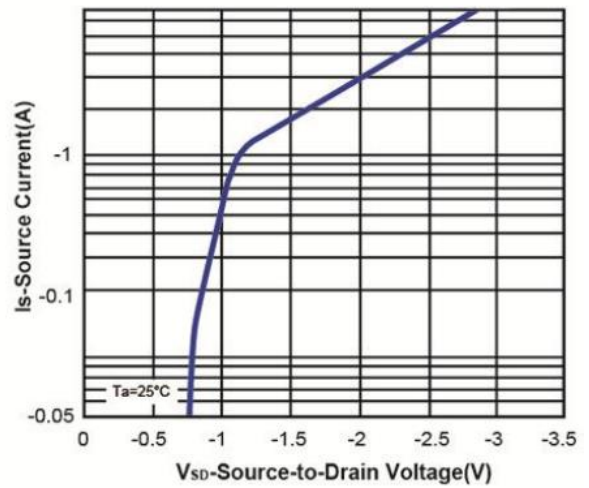


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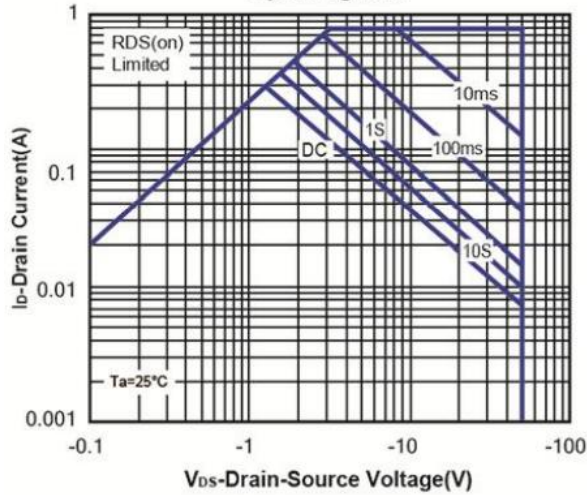
Gate Charge



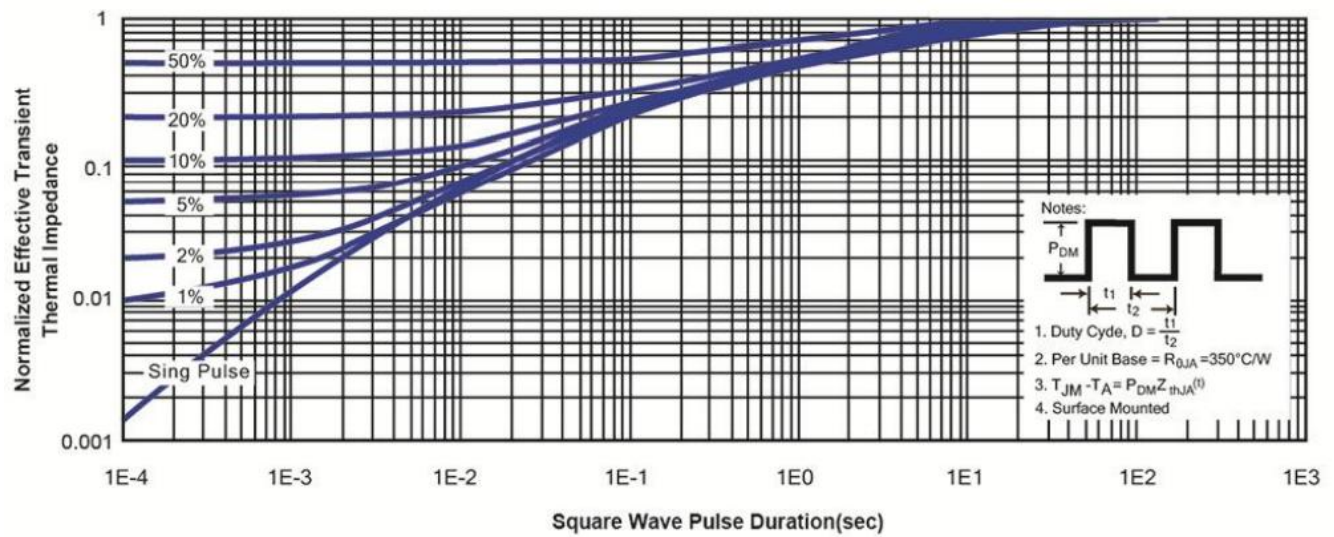
Body-diode characteristics



Maximum Forward Biased Safe Operating Area

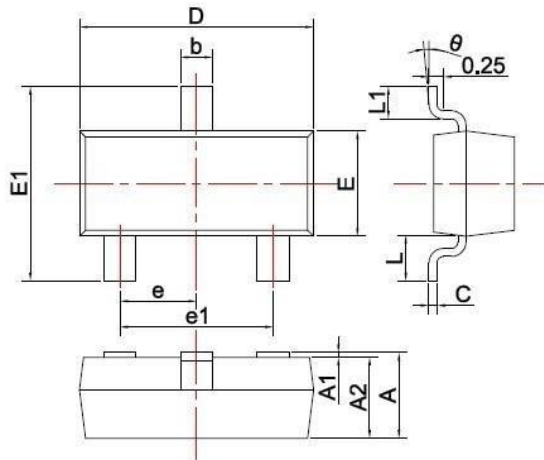


Normalized Thermal Transient Impedance, Junction-to-Ambient



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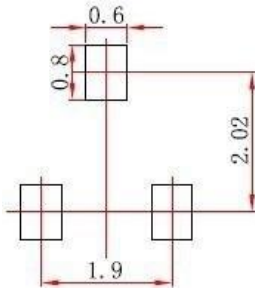
## SOT-23 Package Outline Dimensions



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
H	0°	8°

Unit: mm

### Precautions: PCB Design



#### Note:

1. Controlling dimension: In millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.

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