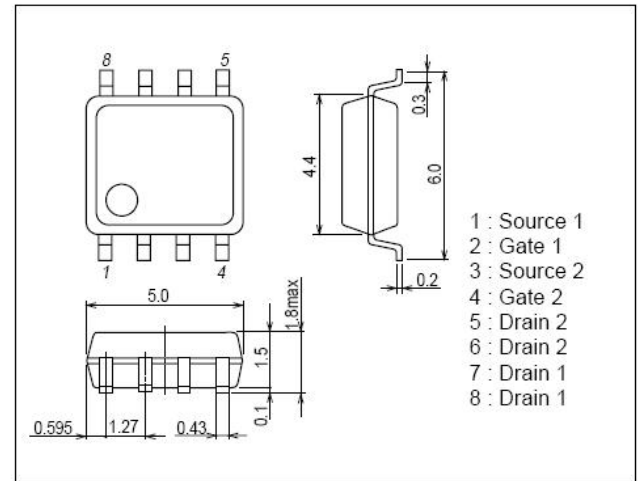


## Features

- Low On resistance.
- 4.5V drive.
- RoHS compliant.



## Package Dimensions

 unit : mm  
 SOP-8


## Specifications

**Absolute Maximum Ratings** at  $T_a=25^{\circ}\text{C}$ 

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{\text{DSS}}$		30	V
Gate-to-Source Voltage	$V_{\text{GSS}}$		$\pm 20$	V
Drain Current (DC)	$I_{\text{D}}$		12	A
Drain Current (Pulse)	$I_{\text{DP}}$	$PW \leq 10\mu\text{S}$ , duty cycle $\leq 1\%$	48	A
Allowable Power Dissipation	$P_{\text{D}}$	Mounted on a ceramic board (1000mm <sup>2</sup> ×0.8mm) 1unit	2	W
Total Dissipation	$P_{\text{T}}$	Mounted on a ceramic board (1000mm <sup>2</sup> ×0.8mm)	1.28	W
Channel Temperature	$T_{\text{ch}}$		150	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg}}$		-55~+150	$^{\circ}\text{C}$

**Electrical Characteristics** at  $T_a=25^{\circ}\text{C}$ 

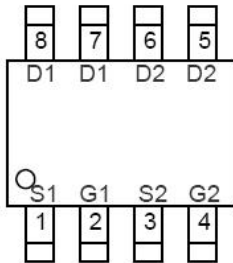
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}} = 0\text{V}$ , $I_{\text{D}} = 250\text{A}$	30	-	-	V
Zero-Gate Voltage Drain Current	$I_{\text{DSS}}$	$V_{\text{DS}} = 24\text{V}$ , $V_{\text{GS}} = 0\text{V}$	-	-	1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{\text{GSS}}$	$V_{\text{GS}} = \pm 20\text{V}$ , $V_{\text{DS}} = 0\text{V}$	-	-	$\pm 100$	nA
Gate Threshold Voltage	$V_{\text{GS(th)}}$	$V_{\text{DS}} = V_{\text{GS}}$ , $I_{\text{D}} = 250\mu\text{A}$	1.3	1.7	2.1	V
Static Drain-to-Source On-State Resistance	$R_{\text{DS(ON)}}$	$V_{\text{GS}} = 10\text{V}$ , $I_{\text{D}} = 12\text{A}$	-	9.5	11	m $\Omega$
	$R_{\text{DS(ON)}}$	$V_{\text{GS}} = 4.5\text{V}$ , $I_{\text{D}} = 9\text{A}$	-	14.5	18.5	m $\Omega$
Input Capacitance	$C_{\text{iss}}$	$V_{\text{DS}} = 15\text{V}$ , $V_{\text{GS}} = 0\text{V}$ , $f = 1\text{MHz}$	-	828	-	pF
Output Capacitance	$C_{\text{oss}}$	$V_{\text{DS}} = 15\text{V}$ , $V_{\text{GS}} = 0\text{V}$ , $f = 1\text{MHz}$	-	196	-	pF
Reverse Transfer Capacitance	$C_{\text{rss}}$	$V_{\text{DS}} = 15\text{V}$ , $V_{\text{GS}} = 0\text{V}$ , $f = 1\text{MHz}$	-	174	-	pF

# Si4812

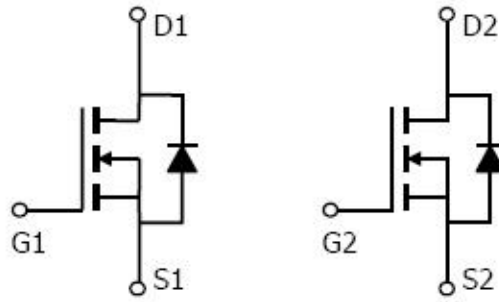
## Electrical Characteristics at $T_a=25^{\circ}\text{C}$ (Continued)

Parameter	Symbol	Conditions	Ratings			Unit
			min	Typ	max	
Turn-on Delay Time	$t_{d(\text{on})}$	$V_{\text{DS}}=15\text{V}, I_{\text{D}}=1\text{A}, V_{\text{GS}}=10\text{V},$ $R_{\text{GS}}=6\Omega$	-	12	-	nS
Rise Time	$t_r$		-	10	-	nS
Turn-off Delay Time	$t_{d(\text{off})}$		-	30	-	nS
Fall Time	$t_f$		-	15	-	nS
Total Gate Charge	$Q_g$	$V_{\text{DS}}=15\text{V}, V_{\text{GS}}=10\text{V}, I_{\text{D}}=12\text{A}$	-	17.6	-	nC
Gate-to-Source Charge	$Q_{\text{gs}}$		-	2.8	-	nC
Gate-to-Drain “Miller” Charge	$Q_{\text{gd}}$		-	7.4	-	nC
Diode Forward Voltage	$V_{\text{SD}}$	$I_{\text{S}}=1\text{A}, V_{\text{GS}}=0\text{V}$	-		1.2	V

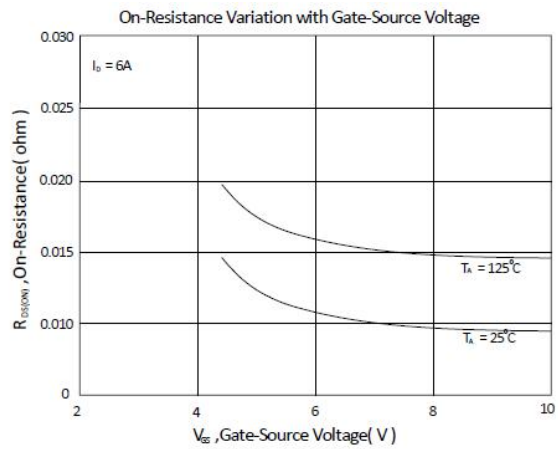
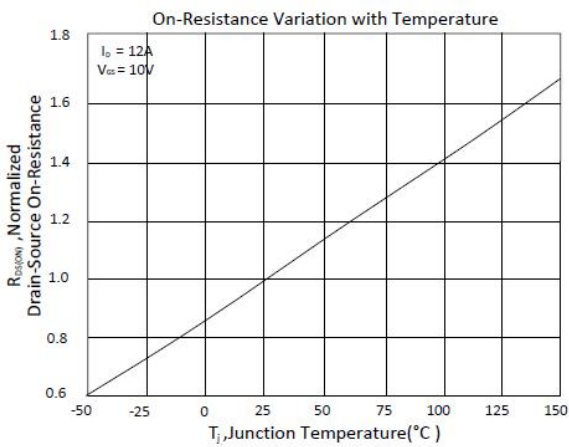
## Pin Description

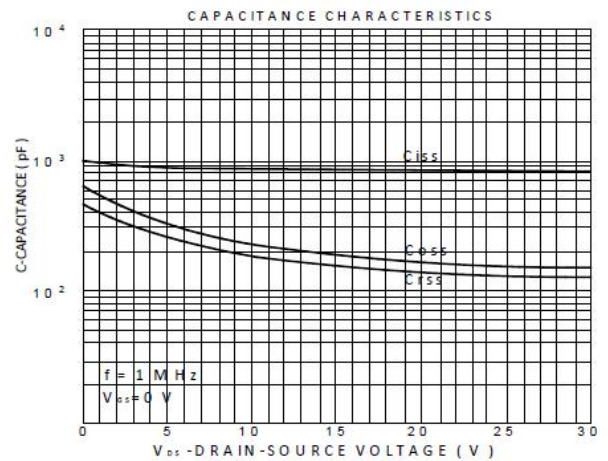
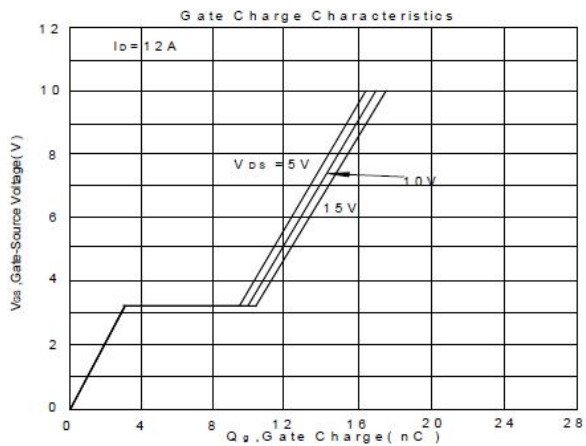
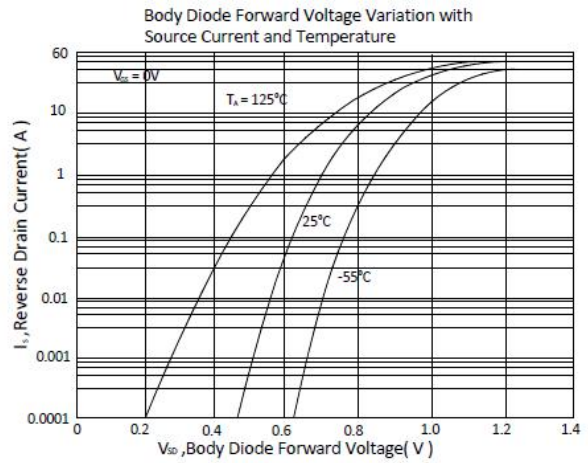
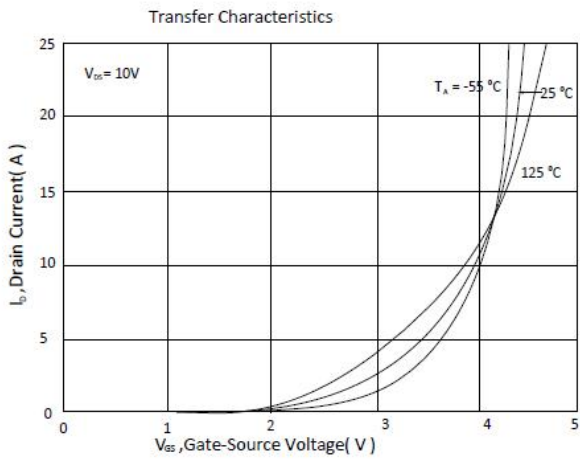
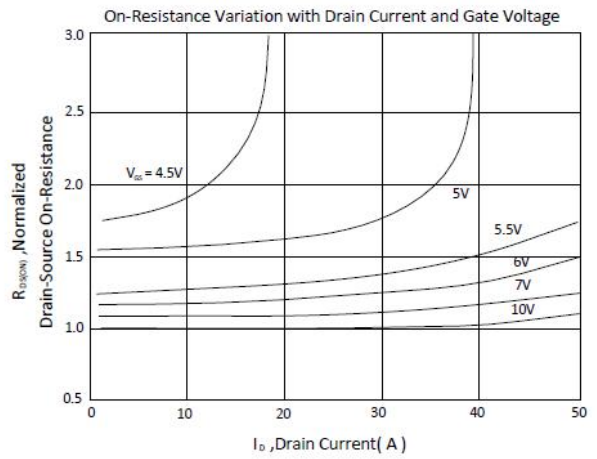
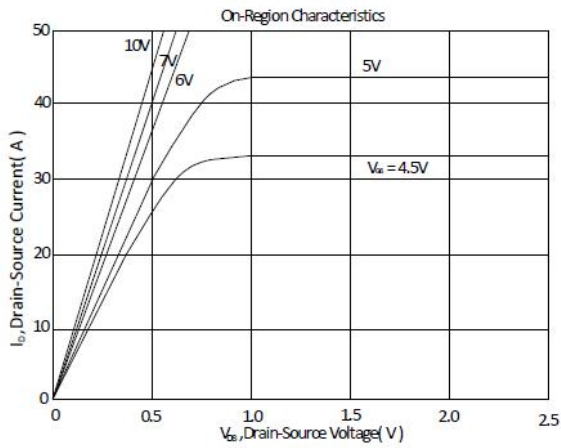


TOP VIEW  
SOP-8



## Typical Characteristics at $T_a=25^{\circ}\text{C}$





# Si4812

