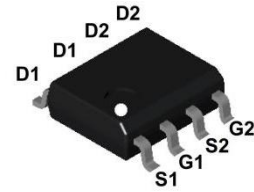


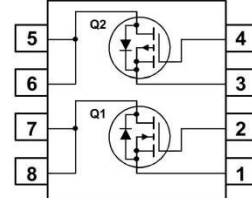
Features

- Low on resistance
- 4.5V/-4.5V drive
- RoHS compliant



Applications

- • DC/DC converter
- • Power management
- • LCD backlight inverter



Absolute Maximum Ratings Tc = 25° C

Parameter	Symbol	Conditions	Ratings		Unit
			N-Ch	P-Ch	
Drain-to-Source Voltage	V _{DSS}		45	-35	V
Gate-to-Source Voltage	V _{GSS}		±25	±25	
Drain Current (DC)	I _D		5	-3.5	A
Drain Current (Pulse)	I _{DP}	PW ≤ 10μS, duty cycle ≤ 1	20	-14	
Allowable Power Dissipation	P _D	Mounted on a ceramic board (1000mm ² ×0.8mm) 1unit	1.3		W
Total Dissipation	P _T	Mounted on a ceramic board (1000mm ² ×0.8mm)	1.7		
Channel Temperature	T _{ch}	Maximum Junction Temperature	150		℃
Storage Temperature	T _{stg}	Storage Temperature Range	-55~+150		
Thermal Resistance	R _{th(J-A)}	Junction to Ambient(Max.)	62.5		℃/W

Electrical Characteristics Tc= 25° C

Parameter	Symbol	Conditions		Ratings			Unit
				Min	Typ	Max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 250\mu A$, $V_{GS} = 0V$	N-Ch	45	-	-	V
		$I_D = -250\mu A$, $V_{GS} = 0V$	P-Ch	-35	-	-	
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 45V$, $V_{GS} = 0V$	N-Ch	-	-	1	μA
		$V_{DS} = -35V$, $V_{GS} = 0V$	P-Ch	-	-	-1	
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = +25V$, $V_{DS} = 0V$	N-Ch	-	-	±100	nA
		$V_{GS} = +25V$, $V_{DS} = 0V$	P-Ch	-	-	±100	
Gate Threshold	$V_{GS(th)}$	$V_{DS} = V_{GS}$,	N-Ch	1	1.5	2.5	V

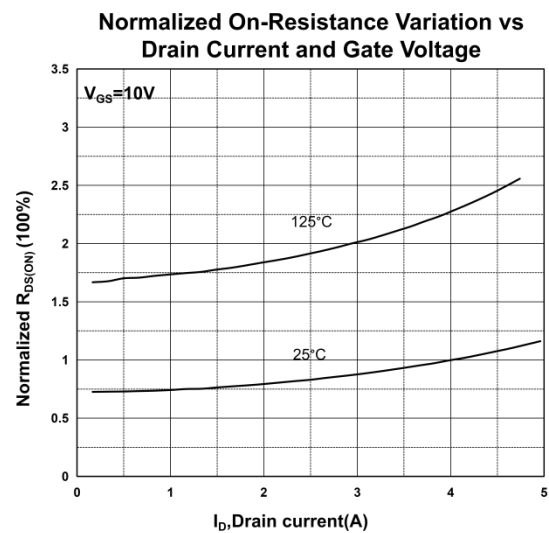
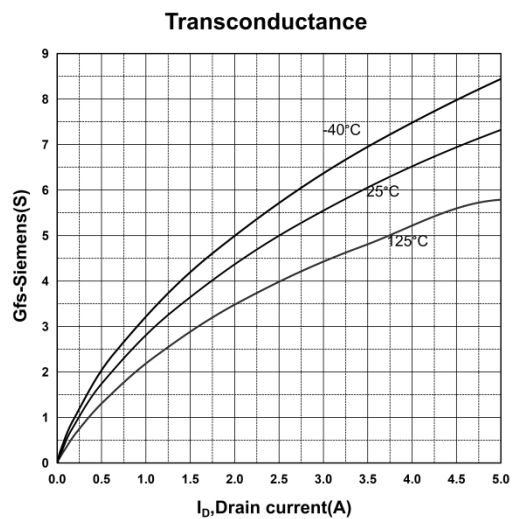
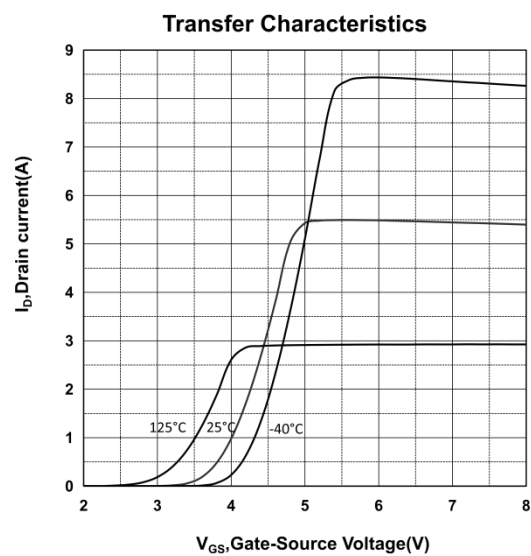
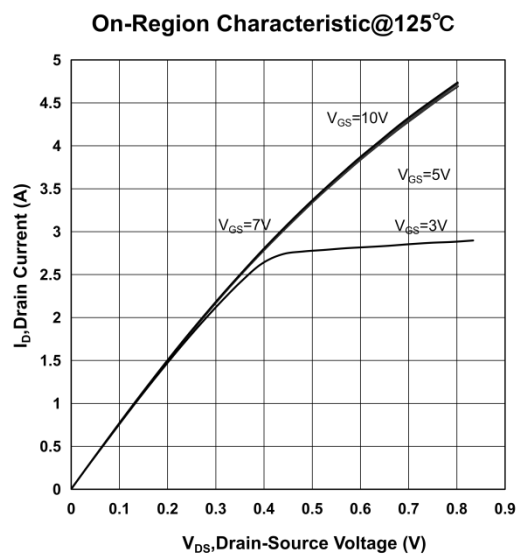
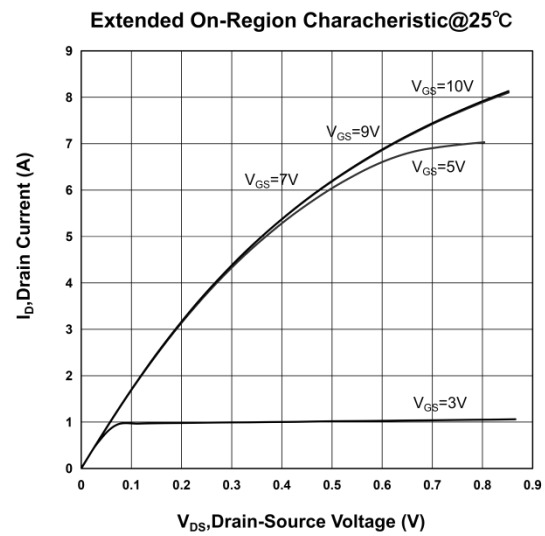
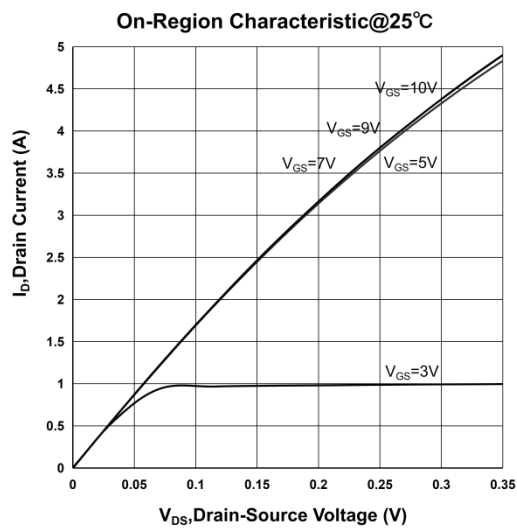
Voltage		$I_D = 250\mu A$					
		$V_{DS} = V_{GS},$ $I_D = -250\mu A$	P-Ch	-1	-2	-2.5	
Static Drain-to-Source On-State Resistance	$R_{DS(ON)}$	$I_D = 4A, V_{GS} = 10V$	N-Ch	-	66	86	mΩ
		$I_D = -3A, V_{GS} = -10V$	P-Ch	-	75	100	
Transconductance	G_{fs}	$V_{DS}=10V, I_D=4A$	N-Ch	-	5.8	-	S
		$V_{DS}=-10V, I_D=-3A$	P-Ch	-	4.3	-	

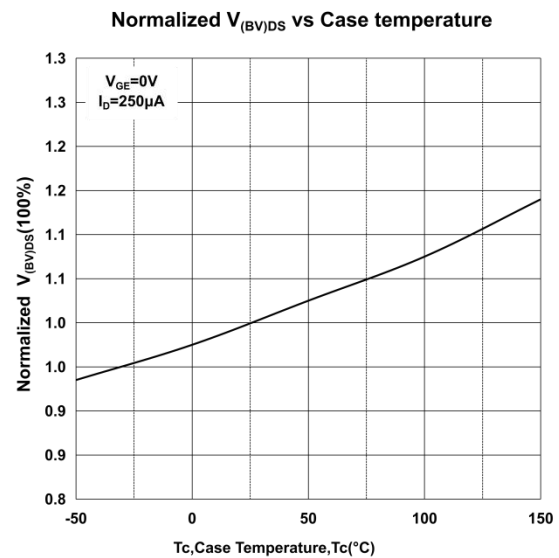
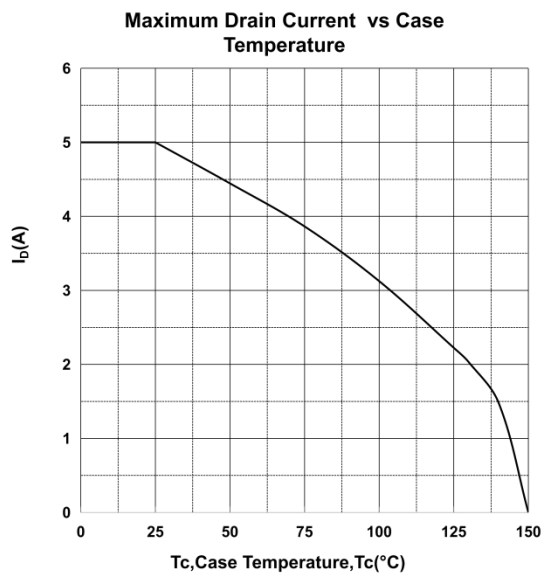
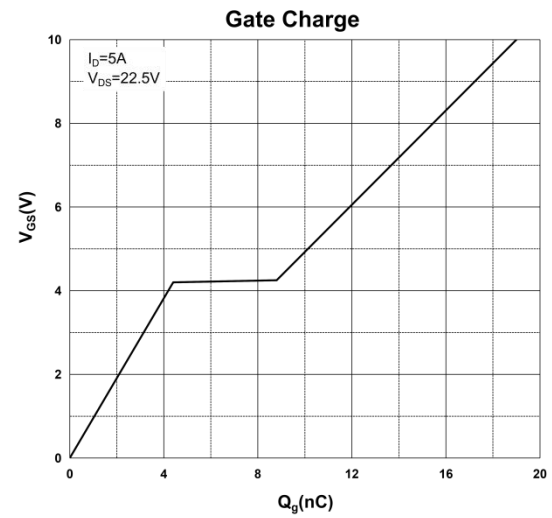
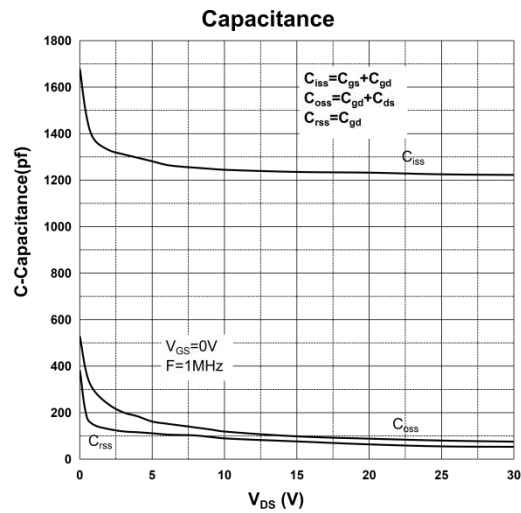
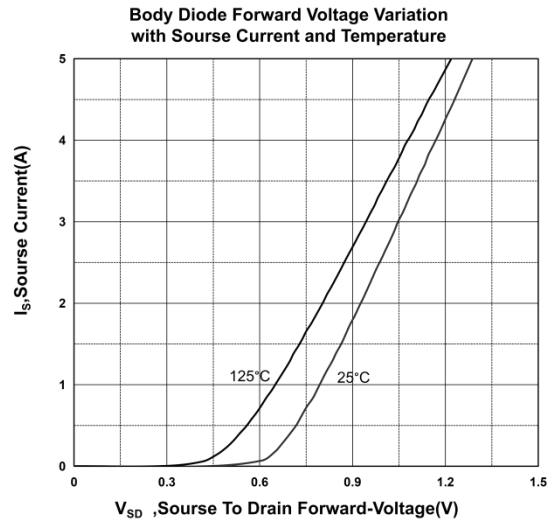
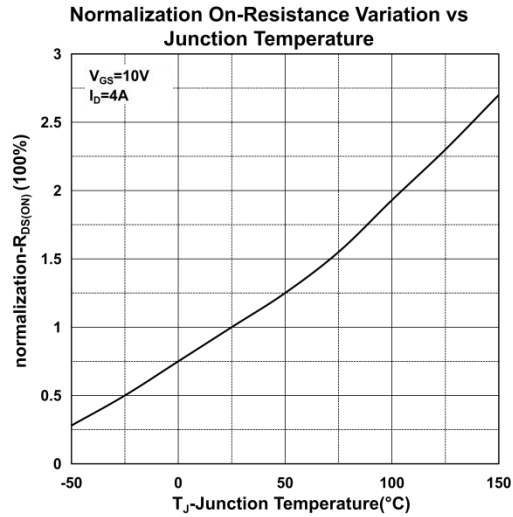
Electrical Characteristics Tc= 25° C (Continued)

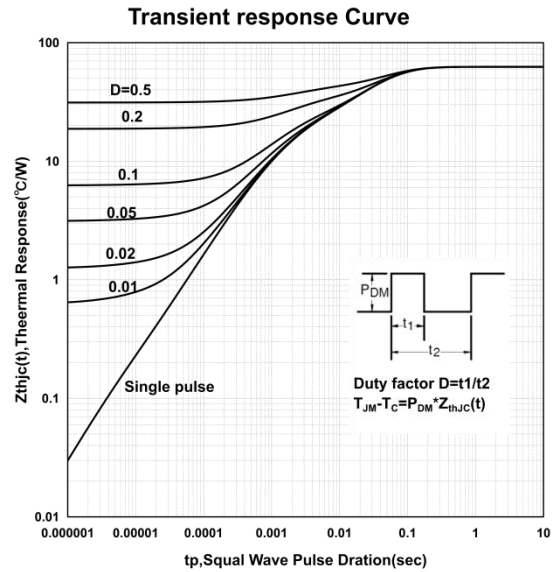
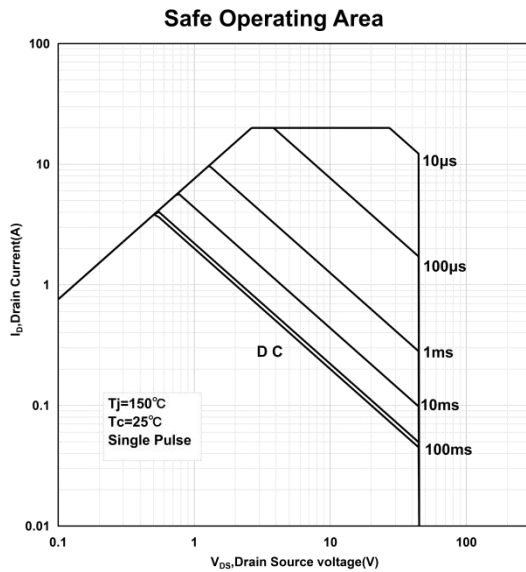
Parameter	Symbol	Conditions		Ratings			Unit
				Min	Typ	Max	
Static Drain-to-Source On-State Resistance	R _{DS(ON)}	I _D = 4A, V _{GS} = 4.5V	N-Ch	-	50	65	mΩ
		I _D = -3.1A, V _{GS} = -4.5V	P-Ch	-	80	100	
Input Capacitance	C _{ISS}	V _{DS} = 22.5V, V _{GS} = 0V, f = 1MHz	N-Ch	-	1225	-	
		V _{DS} = -17.5V, V _{GS} = 0V, f = 1MHz	P-Ch	-	1650	-	
Output Capacitance	C _{OSS}	V _{DS} = 22.5V, V _{GS} = 0V, f = 1MHz	N-Ch	-	80	-	pF
		V _{DS} = -17.5V, V _{GS} = 0V, f = 1MHz	P-Ch	-	85	-	
Reverse Transfer Capacitance	C _{RSS}	V _{DS} =22.5V, V _{GS} = 0V, f = 1MHz	N-Ch	-	65	-	
		V _{DS} = -22.5V, V _{GS} = 0V, f = 1MHz	P-Ch	-	70	-	
Turn-on Delay Time	t _{d(on)}	N-Channel V _{GEN} = 10V, V _{DS} =22.5V, R _L = 30Ω, I _D = 1A, R _{GEN} = 6Ω P-Channel V _{GEN} = -10V, V _{DS} = -17.5V, R _L = 30Ω, I _D = -1A, R _{GEN} = 6Ω	N-Ch	-	9	17	ns
	P-Ch		-	7	14		
Rise Time	t _r		N-Ch	-	6	12	
			P-Ch	-	8	15	
Turn-off Delay Time	t _{d(off)}		N-Ch	-	25	46	
			P-Ch	-	47	86	
Fall Time	t _f		N-Ch	-	5	10	
			P-Ch	-	17	32	
Total Gate Charge	Q _g	N-Channel	N-Ch	-	19	27	nC
			P-Ch	-	22	31	
Gate-to-Source Charge	Q _{gs}	V _{DS} = 22.5V, V _{GS} = 10V, I _D = 5A	N-Ch	-	4.4	-	
		P-Channel	P-Ch	-	2.8	-	
Gate-to-Drain “Miller” Charge	Q _{gd}	V _{DS} = -17.5V, V _{GS} = -10V, I _D =3A	N-Ch	-	4.4	-	
			P-Ch	-	5	-	
Diode Forward Voltage	V _{SD}	I _S = 1A, V _{GS} = 0	N-Ch	-	0.8	1.1	V
		I _S = -1A, V _{GS} = 0	P-Ch	-	-0.8	-1.1	

Typical Characteristics Curve

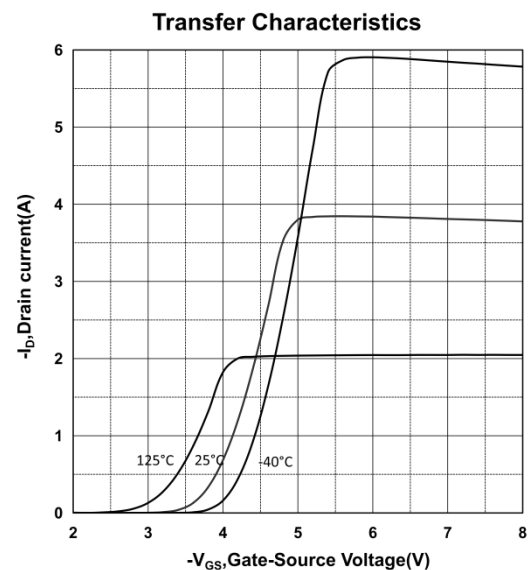
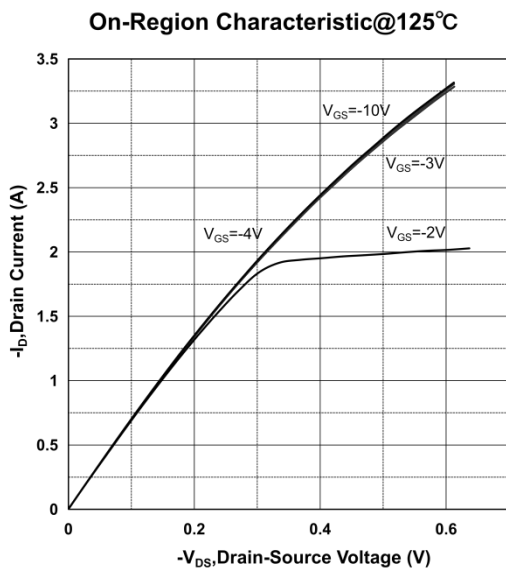
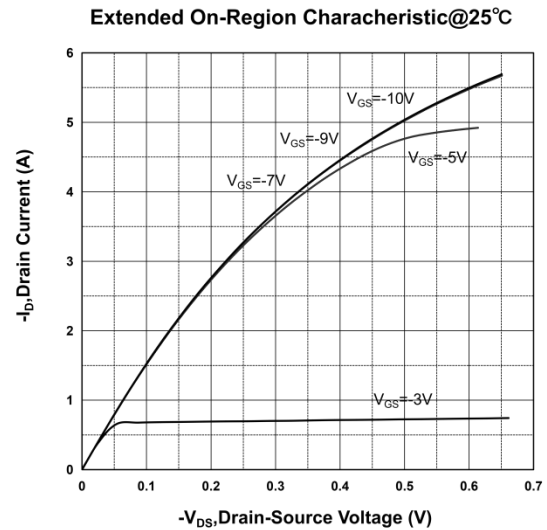
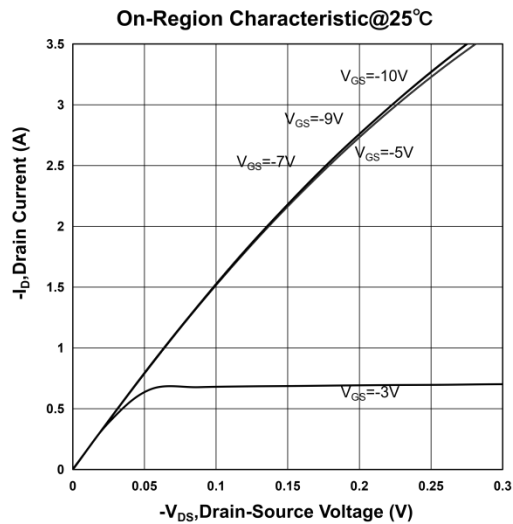
N-Channel



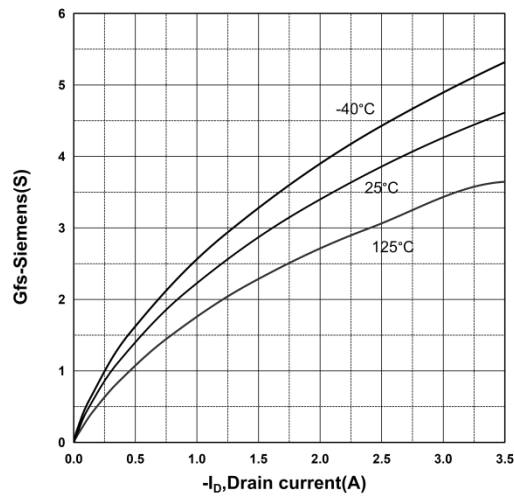




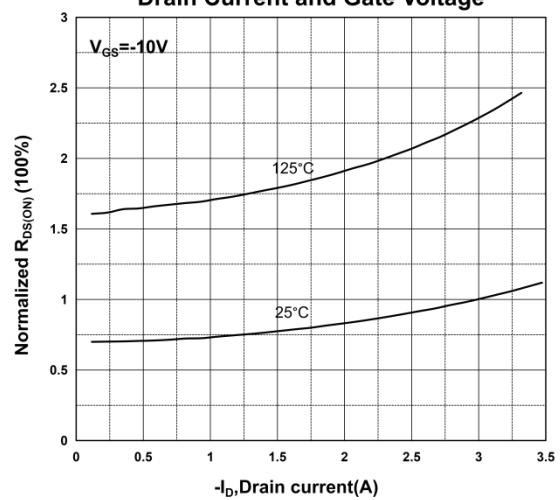
P-Channel



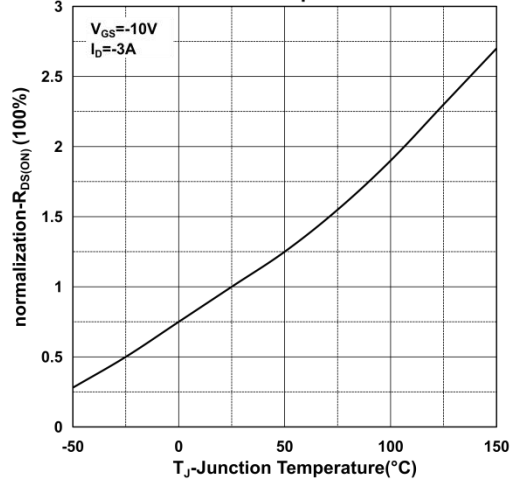
Transconductance



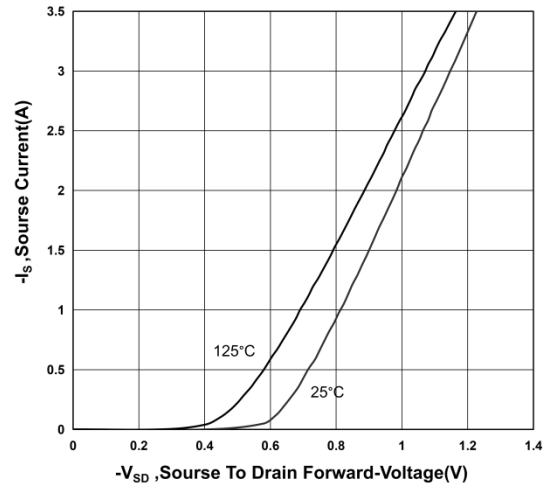
Normalized On-Resistance Variation vs Drain Current and Gate Voltage



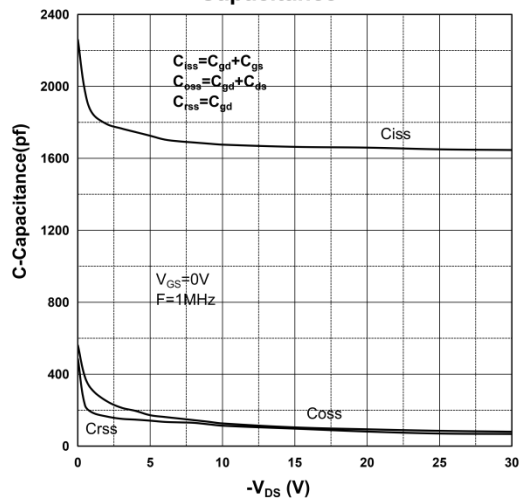
Normalization On-Resistance Variation vs Junction Temperature



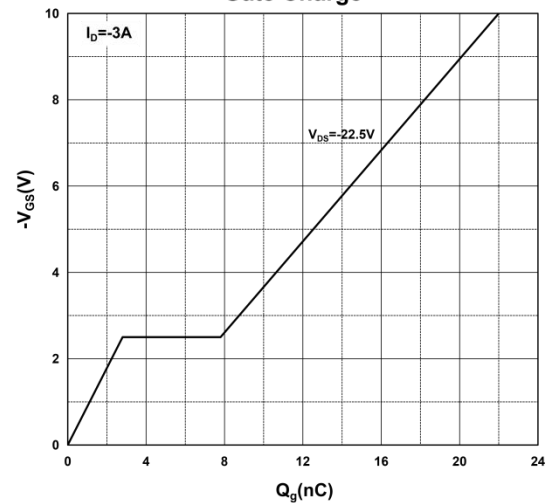
Body Diode Forward Voltage Variation with Source Current and Temperature



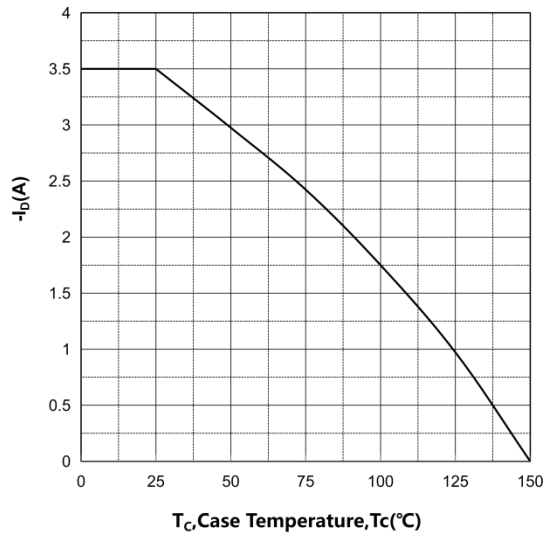
Capacitance



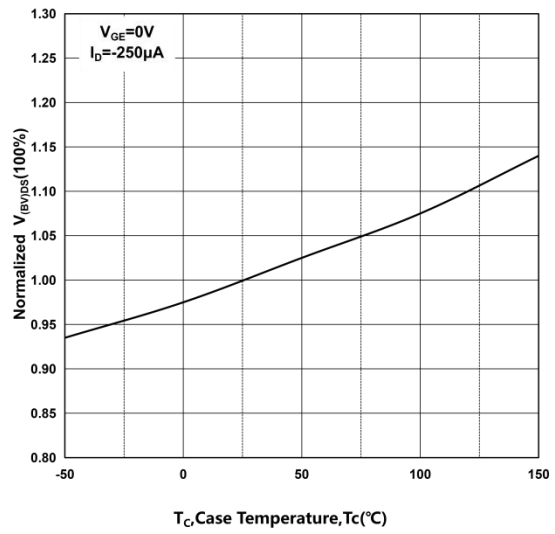
Gate Charge



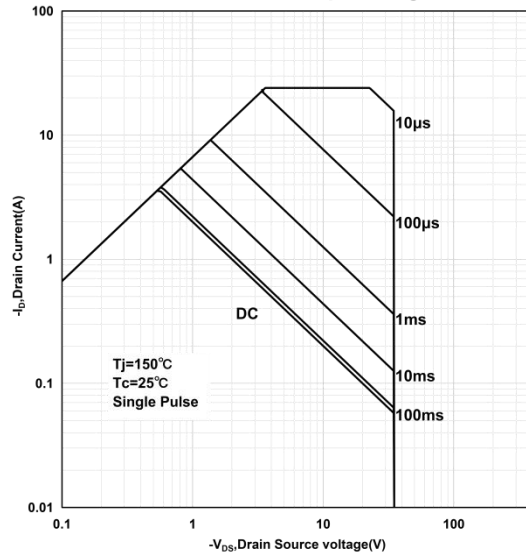
Maximum Drain Current vs
Case Temperature



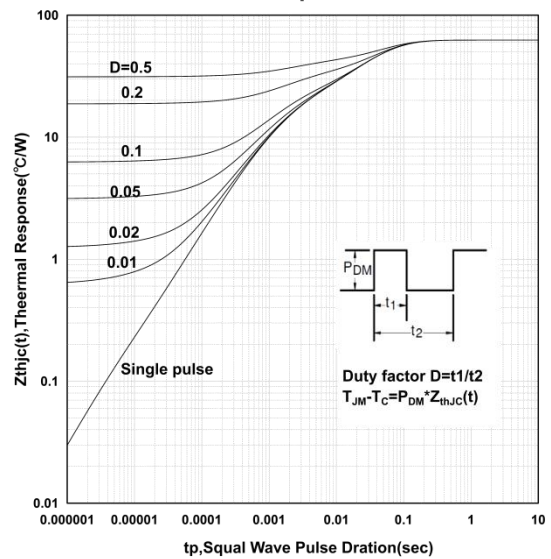
Normalized $V_{(BV)DS}$ vs temperature



Forward-Bias Safe Operating Area

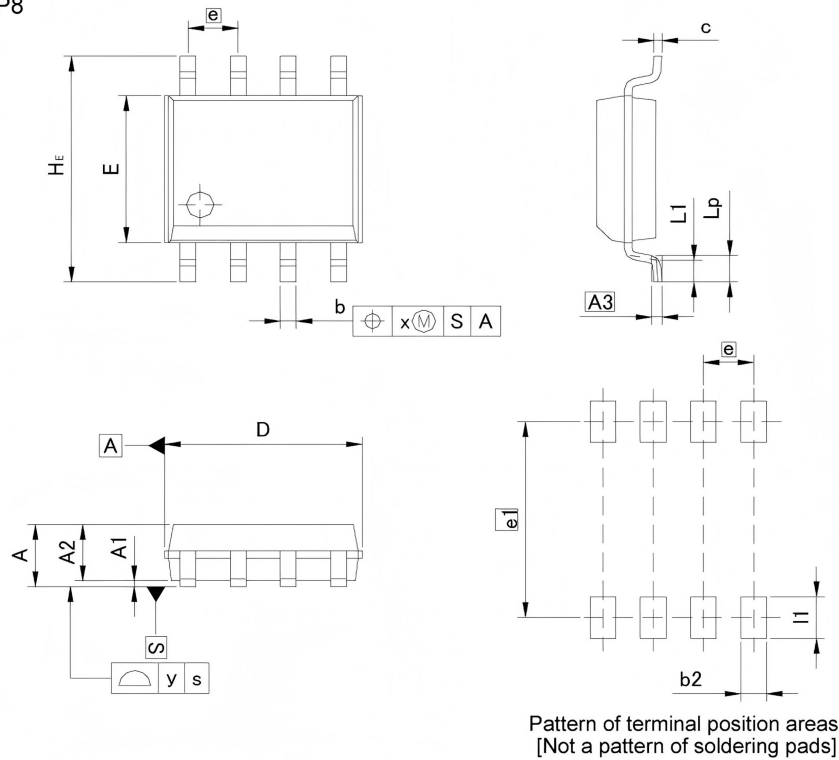


Transient response Curve



Pack Dimensions

SOP8



DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	—	1.75	—	0.069
A1	0.15		0.006	
A2	1.40	1.60	0.055	0.063
A3	0.25		0.010	
b	0.30	0.50	0.012	0.020
c	0.10	0.30	0.004	0.012
D	4.80	5.20	0.189	0.205
E	3.75	4.05	0.148	0.159
e	1.27		0.050	
H _E	5.70	6.30	0.224	0.248
L1	0.40	0.60	0.016	0.024
Lp	0.65	0.85	0.026	0.033
x	0.15		0.006	
y	0.10		0.004	

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	—	0.65	—	0.026
e1	5.15		0.203	
l1	—	1.15	—	0.045

Dimension in mm/inches