

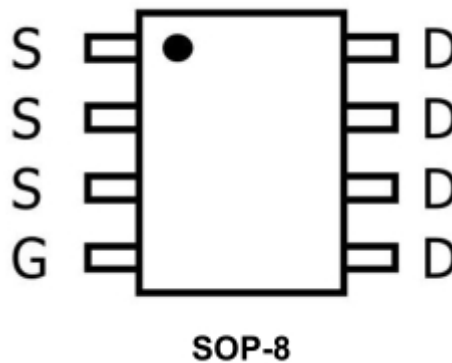
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	7.5mΩ@-4.5V	-18A
	9mΩ@-2.5V	

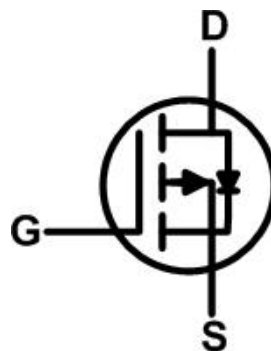
Feature

- Super Low Gate Charge
- Green Device Available
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

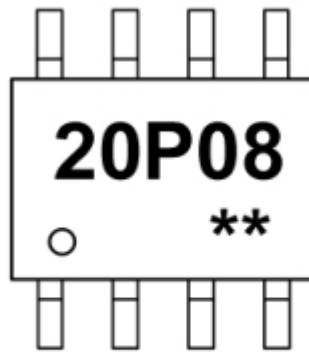
Package



Circuit diagram



Marking



20P08 =Device Code
****** =Week Code

Absolute maximum ratings

(T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-20	V
Gate-Source Voltage	V _{GS}	±8	V
Drain Current-Continuous	I _D	-18	A
Drain Current-Pulsed ¹	I _{DM}	-60	A
Maximum Power Dissipation	P _D	1.5	W
Thermal Resistance,Junction-to-Ambient ²	R _{θJA}	85	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 To 150	°C

Electrical characteristics

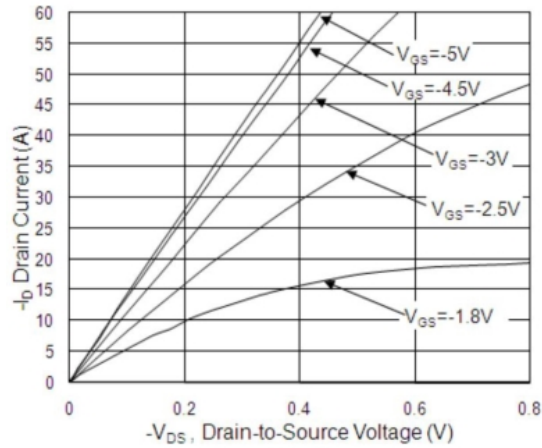
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 100	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.45	-0.7	-1	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -10A$		7.5	9	m Ω
		$V_{GS} = -2.5V, I_D = -8A$		9	12	
Dynamic Characteristics ⁴						
Input Capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V,$ $f = 1MHz$		5783		pF
Output Capacitance	C_{oss}			509		
Reverse Transfer Capacitance	C_{rss}			431		
Switching Characteristics ⁴						
Turn-On Delay Time	$T_{d(on)}$	$V_{DD} = -10V, V_{GS} = -4.5V,$ $R_{GEN} = 3.3\Omega, I_D = -10A$		15.8		nS
Rise Time	T_r			76.8		
Turn-Off Delay Time	$T_{d(off)}$			193		
Fall Time	T_f			186.4		
Total Gate Charge	Q_g	$V_{DS} = -15V, V_{GS} = -4.5V,$ $I_D = -10A$		63		pF
Gate Source Charge	Q_{gs}			9.1		
Gate Drain Charge	Q_{gd}			13		
Drain-Source Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = -1A$			-1.2	V

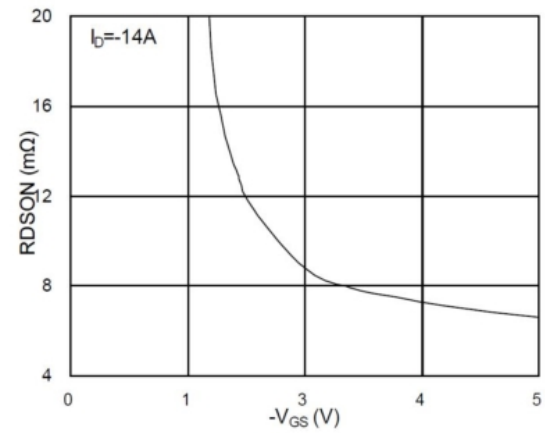
Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production

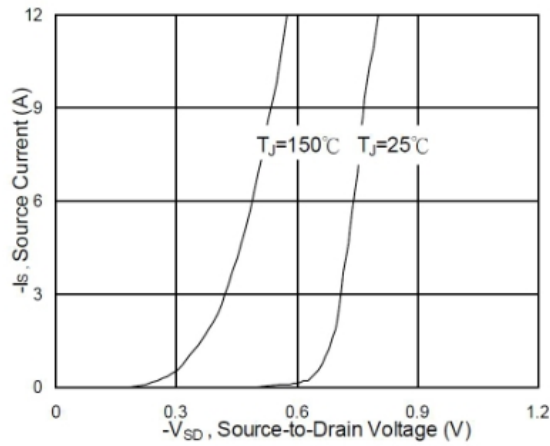
Typical Characteristics



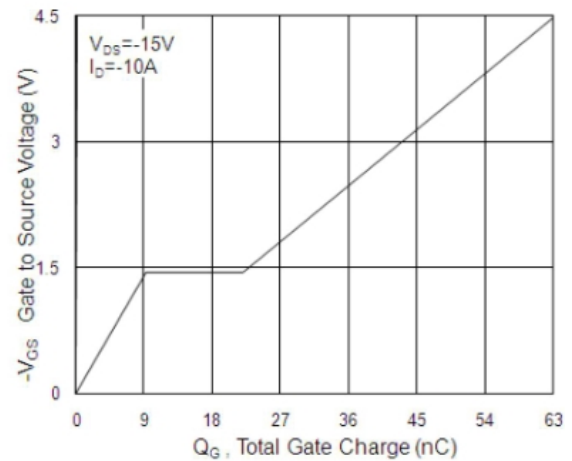
Typical Output Characteristics



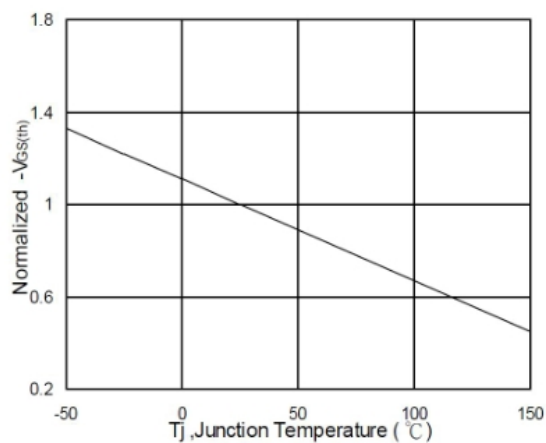
On-Resistance vs. G-S Voltage



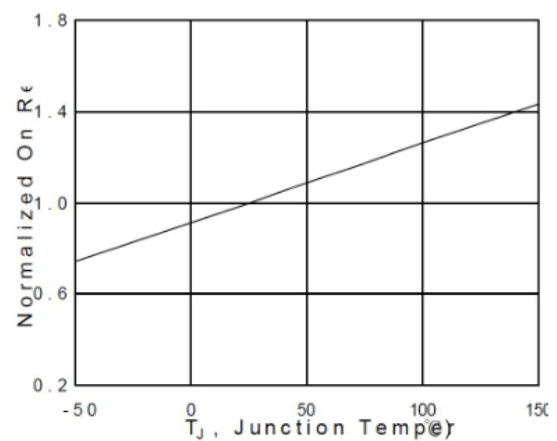
Forward Characteristics of Reverse



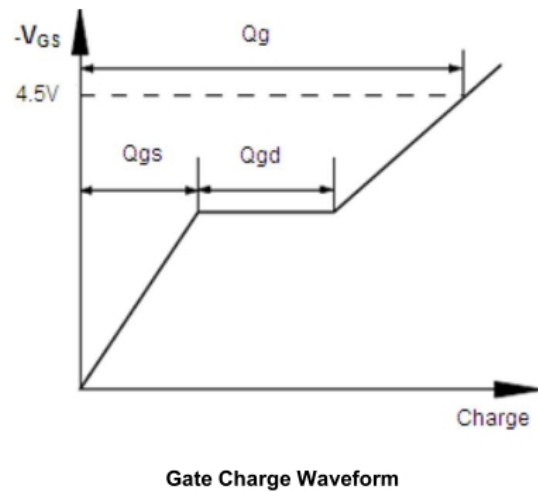
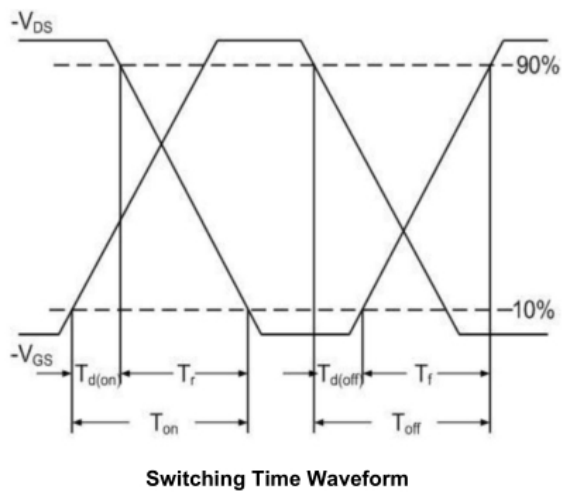
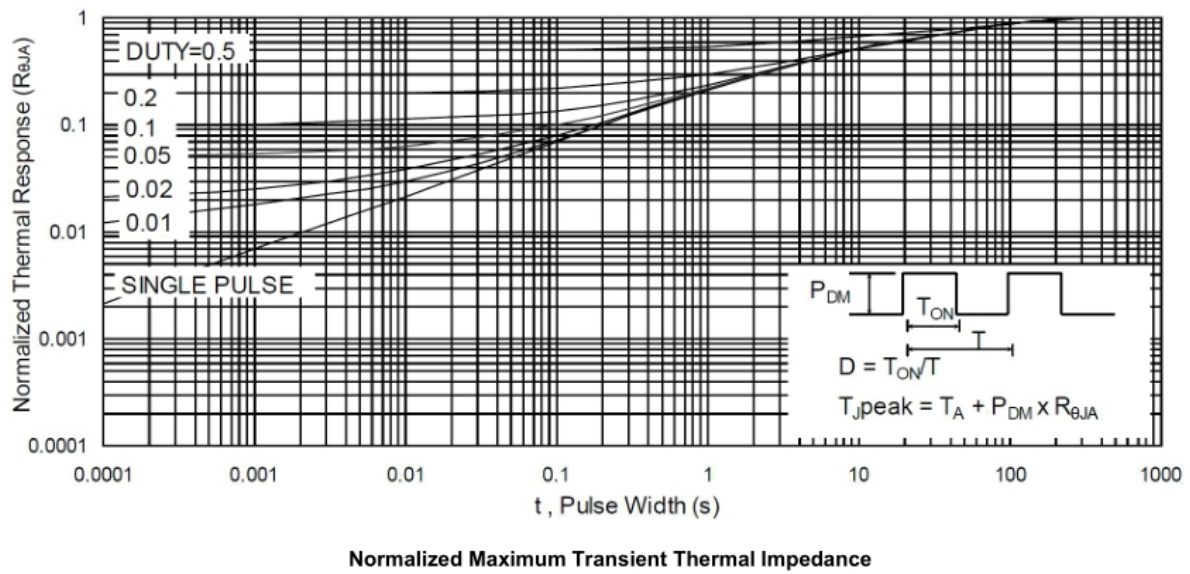
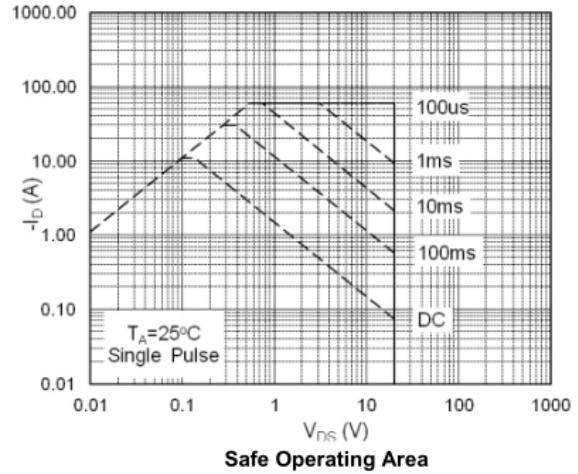
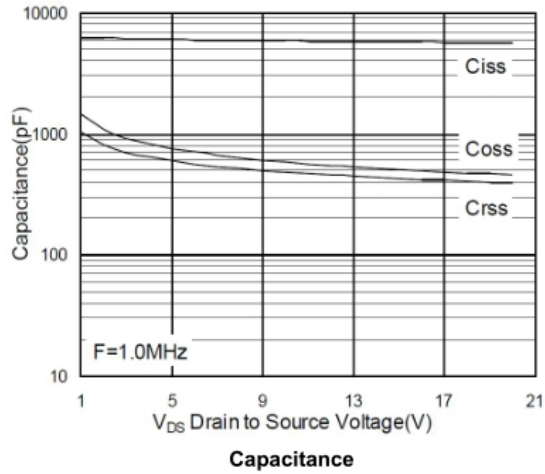
Gate-charge Characteristics



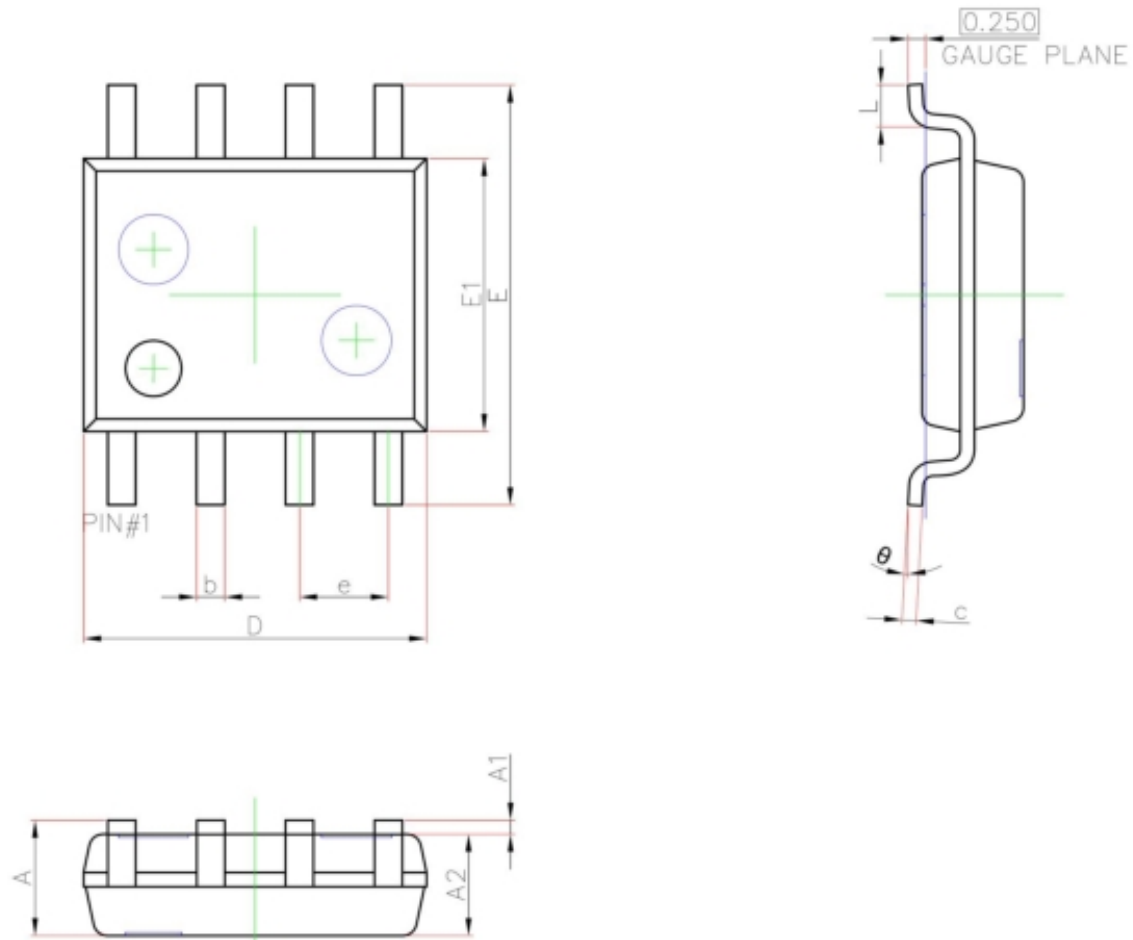
Normalized $V_{GS(th)}$ vs. T_J



Normalized $R_{DS(on)}$ vs. T_J



SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.450	1.750	0.057	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.201
E	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°