

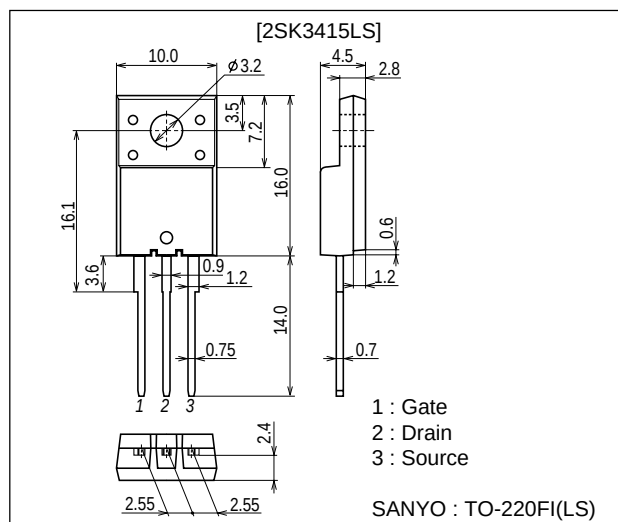
**2SK3415LS****DC / DC Converter, Motor Driver Applications****Features**

- Low ON-resistance.
- 4V drive.

Package Dimensions

unit : mm

2078C

**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		60	V
Gate-to-Source Voltage	V_{GS}		±20	V
Drain Current (DC)	I_D		40	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	160	A
Allowable Power Dissipation	P_D		2.0	W
		Tc=25°C	35	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0$			10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=±16V, V_{DS}=0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.0		2.4	V
Forward Transfer Admittance	yfs	$V_{DS}=10V, I_D=20A$	30	42		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=20A, V_{GS}=10V$		13	17	mΩ
	$R_{DS(on)2}$	$I_D=20A, V_{GS}=4V$		17	24	mΩ

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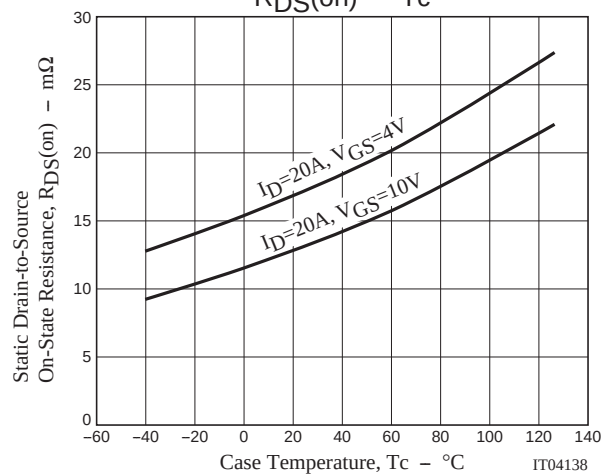
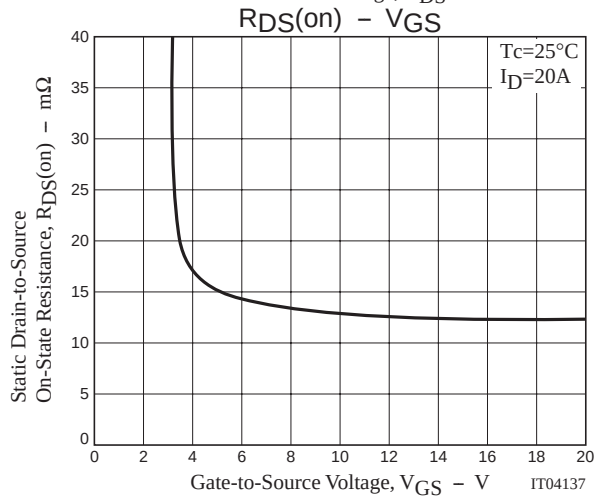
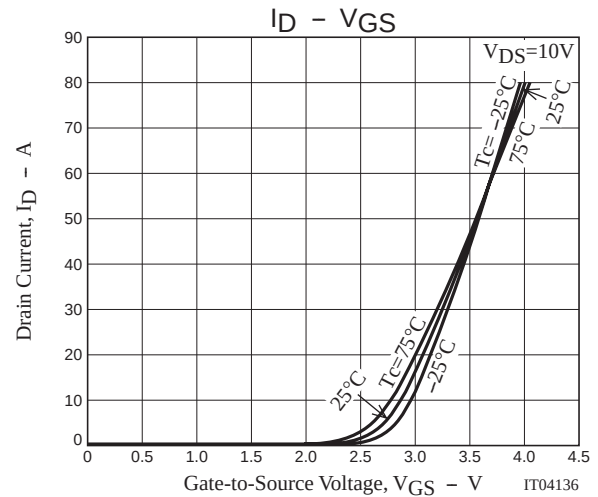
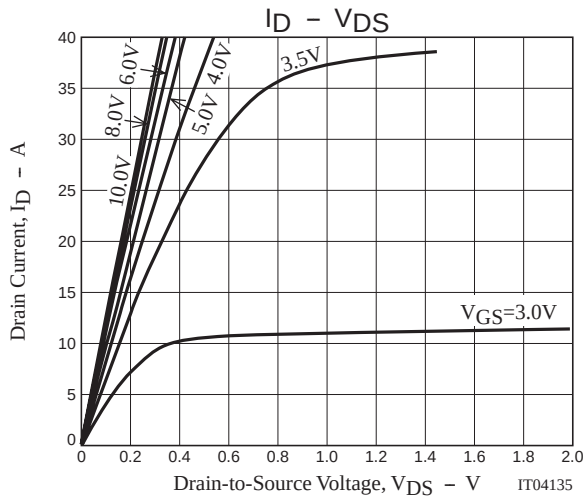
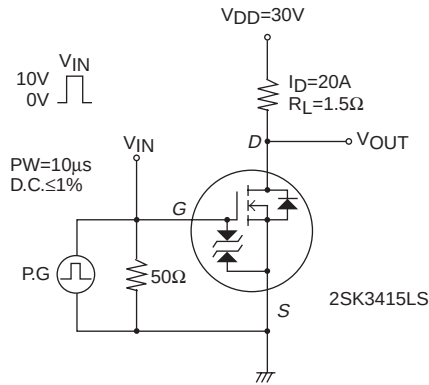
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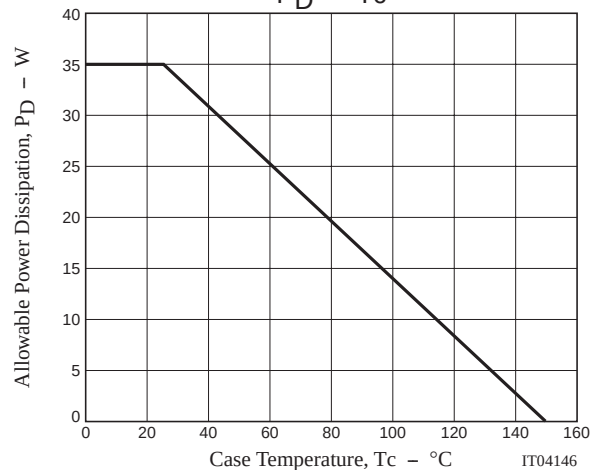
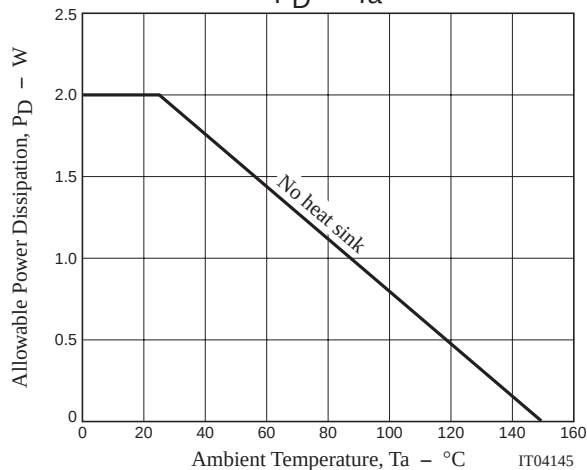
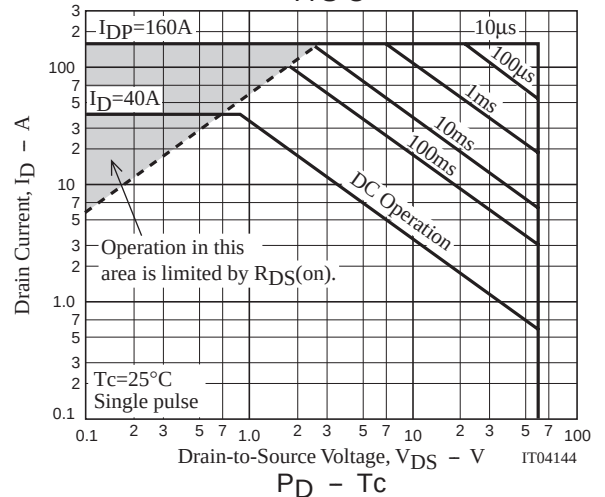
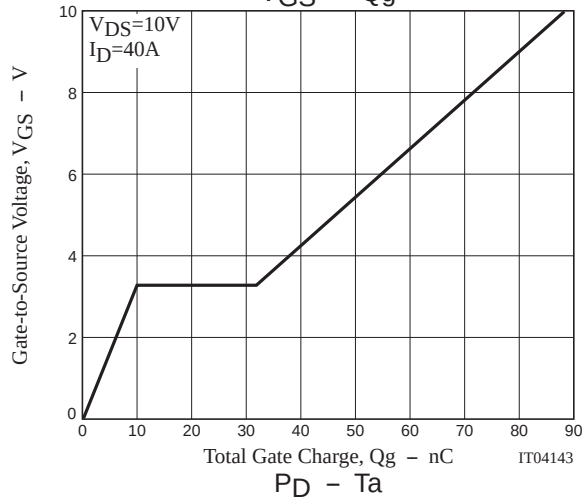
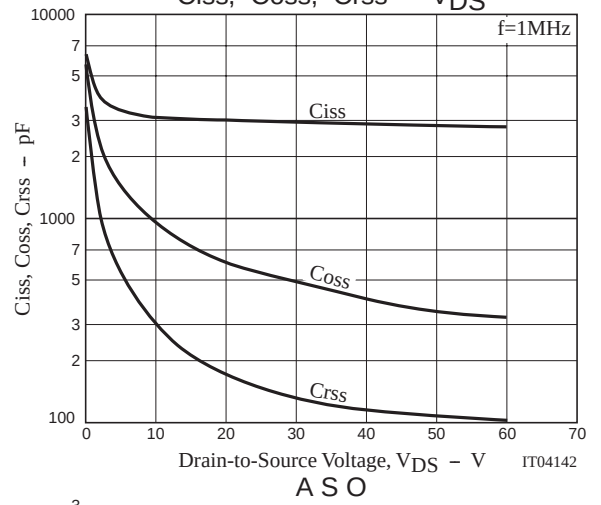
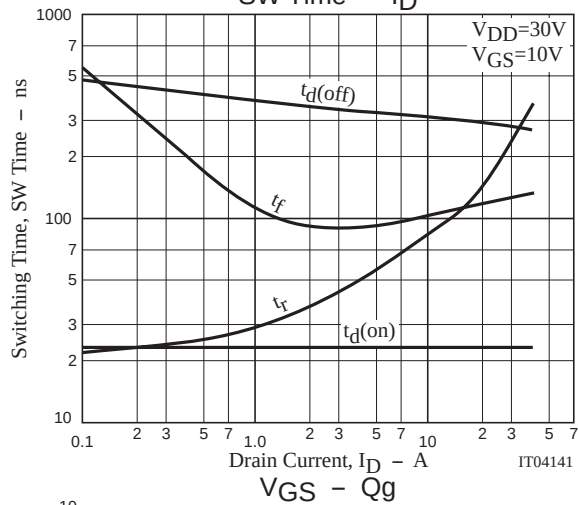
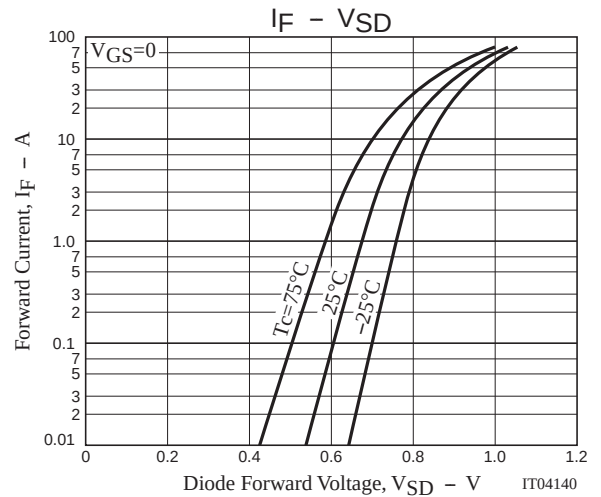
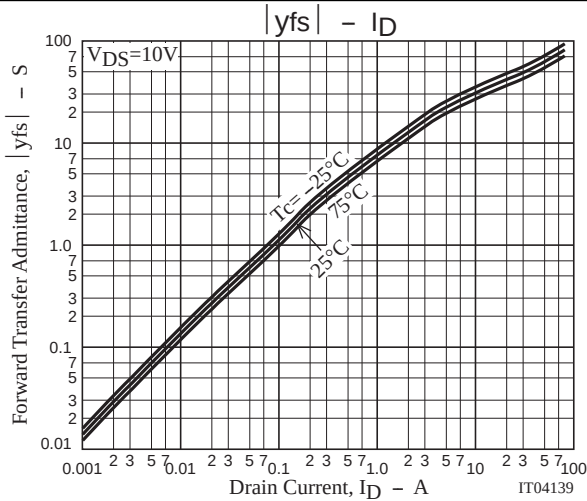
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		3000		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		600		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		180		pF
Turn-ON Delay Time	$t_d(on)$	$I_D=18A, V_{GS}=10V, V_{DD}=30V, R_{GS}=50\Omega$		23		ns
Rise Time	t_r	$I_D=18A, V_{GS}=10V, V_{DD}=30V, R_{GS}=50\Omega$		140		ns
Turn-OFF Delay Time	$t_d(off)$	$I_D=18A, V_{GS}=10V, V_{DD}=30V, R_{GS}=50\Omega$		290		ns
Fall Time	t_f	$I_D=18A, V_{GS}=10V, V_{DD}=30V, R_{GS}=50\Omega$		120		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=40A$		89		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=10V, I_D=40A$		10		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=10V, I_D=40A$		22		nC
Diode Forward Voltage	V_{SD}	$I_S=40A, V_{GS}=0$		0.9	1.2	V

Switching Time Test Circuit



2SK3415LS



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