

Features

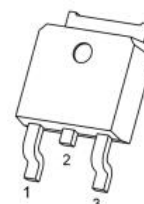
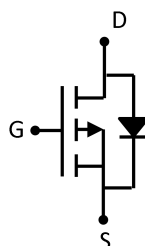
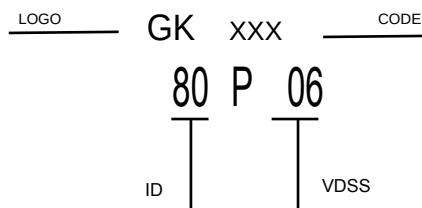
High switching speed
Improved dv/dt capability
Low Gate Charge
Low reverse transfer capacitance

V_{DS} -60 V
 I_D -80 A
 $R_{DS(ON)}$ 11m Ω



Application

Load Switches, Adaptor Switch
Notebook PCs



Schematic Diagram TO-263(G:1 D:2 S:3)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous ($T_c=25^\circ\text{C}$)	I_D	-80	A
Pulsed Drain Current	I_{DM}	-300	A
Single pulse avalanche energy	E_{AS}	361	mJ
Maximum Power Dissipation ($T_c=25^\circ\text{C}$)	P_D	150	W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.83	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ\text{C}$

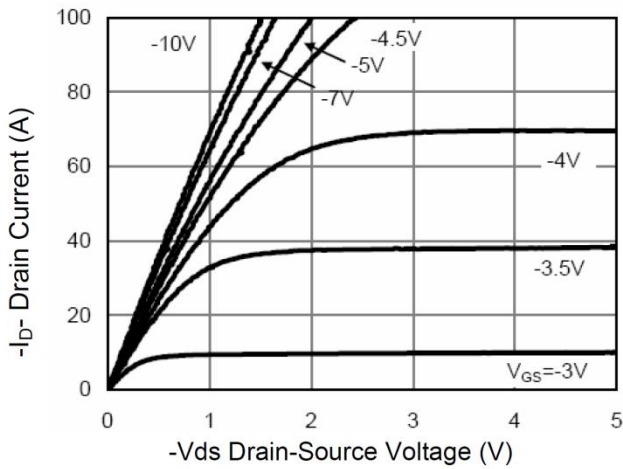
Electrical Characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =-250μA	-60	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V	-	-	-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1	-	-2.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-20A	-	11	14	mΩ
		V _{GS} =-4.5V, I _D =-10A	-	14	18	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-30V, V _{GS} =0V, f = 1MHz	-	7800	-	PF
Output Capacitance	C _{oss}		-	495	-	PF
Reverse Transfer Capacitance	C _{rss}		-	370	-	PF
Switching Characteristics						
Turn-on Delay Time	td _(on)	V _{DD} =-30V, R _L = 4.7Ω V _{GEN} =-10V,R _{GEN} = 3Ω	-	9.8	-	nS
Turn-on Rise Time	tr		-	6.1	-	nS
Turn-Off Delay Time	td _(off)		-	44	-	nS
Turn-Off Fall Time	tf		-	12.7	-	nS
Total Gate Charge	Qg	V _{DS} =-30V, V _{GS} =-10V, I _D =-20A	-	85.5	-	nC
Gate-Source Charge	Qgs		-	12.1	-	nC
Gate-Drain Charge	Qgd		-	23.2	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	VSD	V _{GS} =0V, I _S =-1A	-	-	-1.2	V

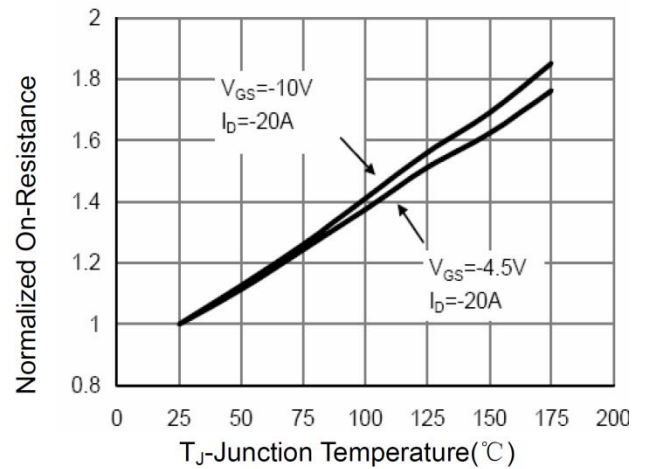
Notes:

1. EAS condition: $T_J=25^{\circ}\text{C}, V_{DD}=-30V, V_G=-10V, L=0.5\text{mH}, R_g=25\Omega$

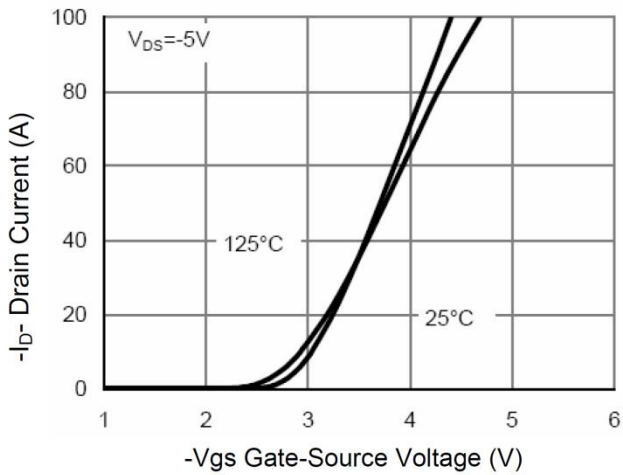
RATING AND CHARACTERISTIC CURVES



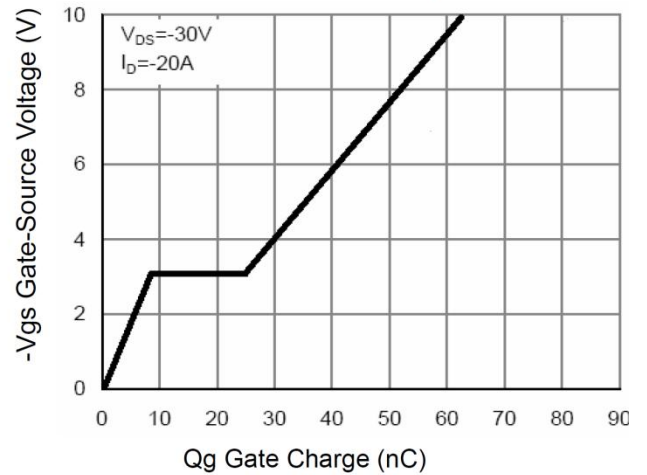
Output Characteristics



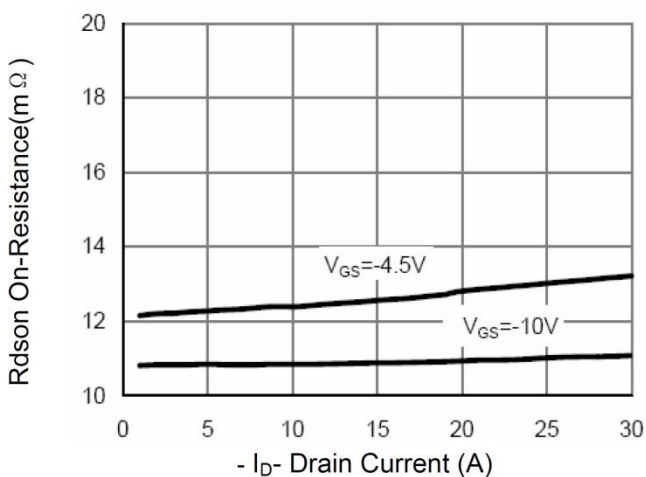
$R_{DS(on)}$ -Junction Temperature



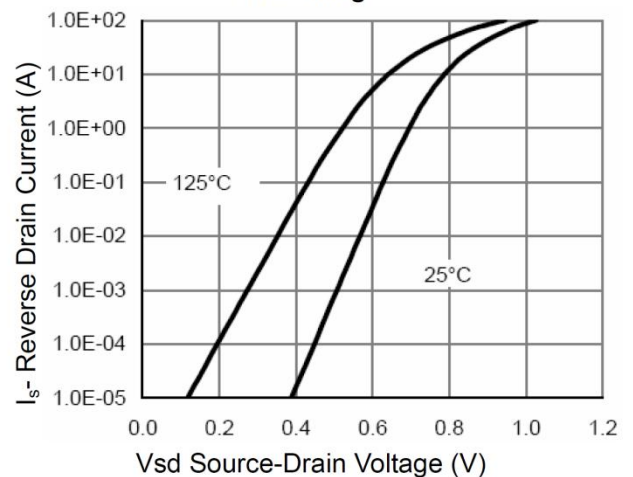
Transfer Characteristics



Gate Charge



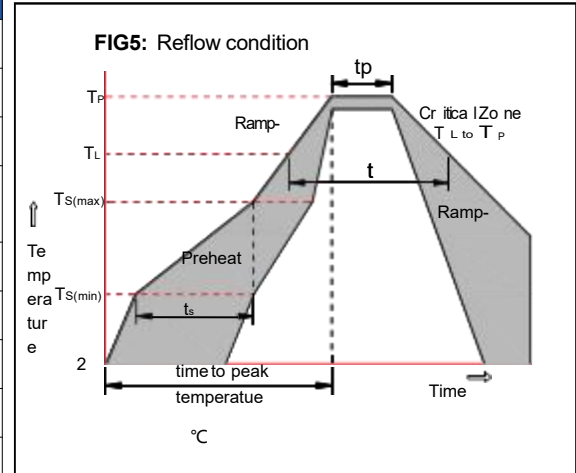
$R_{DS(on)}$ - Drain Current



Source- Drain Diode Forward

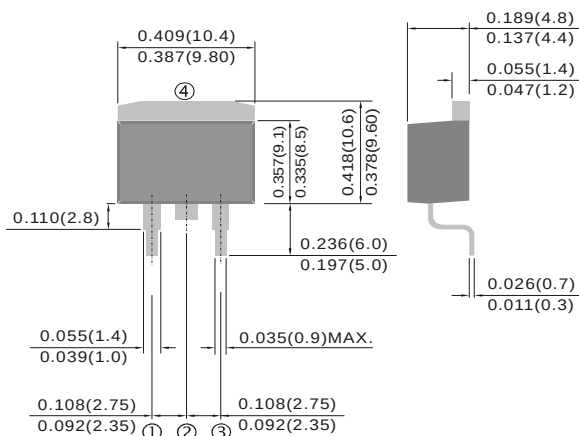
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

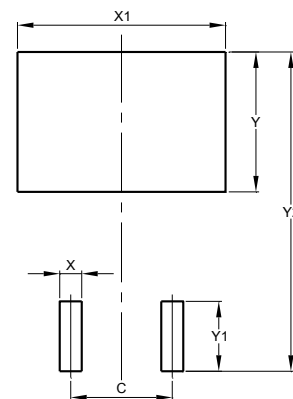


Package Dimensions & Suggested Pad Layout

TO-263 / D²PAK

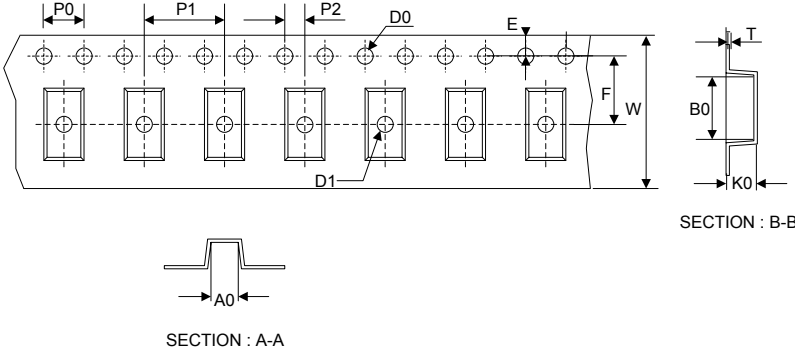
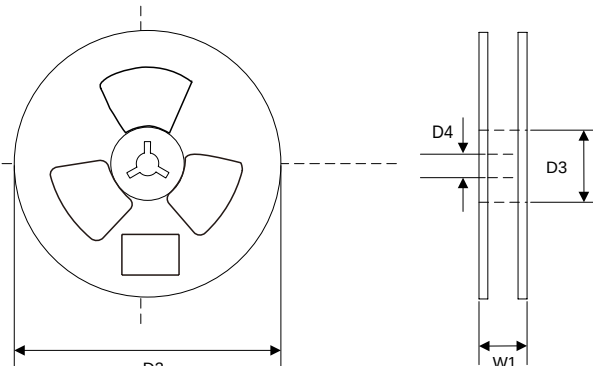


Dimensions in inches and (millimeters)



Dimensions	Value (in mm)
C	5.05
X	1.40
X1	11.00
Y	9.20
Y1	4.00
Y2	16.60

Tape & reel specification

Tape		Symbol	Dimension (mm)
 SECTION : A-A SECTION : B-B		P0	4.00±0.20
		P1	16.00±0.20
		P2	2.00±0.20
		D0	1.50±0.20
		D1	1.50±0.20
		E	1.75±0.15
		F	11.50±0.20
		W	24.00±0.40
		A0	10.50±0.20
		B0	16.00±0.25
		K0	5.20±0.25
		T	0.35±0.10
13" Reel		D2	330.0±5.0
		D3	73Min.
		D4	14.0±2.5
		W1	28.00±2.0
		Quantity: 800PCS	