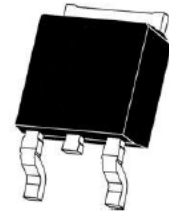


## Description

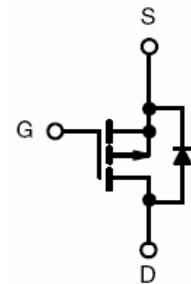
The SK35P06 uses advanced trench technology and design to provide excellent  $R_{DS(ON)}$  with low gate charge. This device is well suited for high current load applications.



TO-252 top view

## General Features

- $V_{DS} = -60V, I_D = -35A$   
 $R_{DS(ON)} < 30m\Omega @ V_{GS} = -10V$
- High density cell design for ultra low  $R_{Dson}$
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high  $E_{AS}$
- Excellent package for good heat dissipation



Schematic diagram

### Absolute Maximum Ratings ( $T_C = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DSS}$	-60V	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20V$	V
Drain Current-Continuous @ $T_C = 25^\circ C$	$I_D$	-35	A
Drain Current-Pulsed	$I_{DM}$	-140	A
Operating Junction Temperature Range	$T_J$	-50 to 150°C	°C

### Electrical Characteristics ( $T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTIC						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-60	-	-	V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS} = -48V, V_{GS} = 0V, T_J = 25^\circ C$	-	-	-1	$\mu A$
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	$\pm 100$	nA
ON CHARACTERISTIC						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS} = V_{DS}, I_D = -250\mu A$	-1.2	-1.6	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = -10V, I_D = -8A$	-	24	30	m $\Omega$
		$V_{GS} = -4.5V, I_D = -6A$	-	28	35	
DYNAMIC CHARACTERISTICS						
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS} = 0V, I_S = -1A$	-	-	-1.0	V

NOTE:

1. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
2. Drain Current, Power Dissipation and  $R_{DS(ON)}$  calculated by TO-252 Package Type.

Typical Electrical and Thermal Characteristics (Curves)

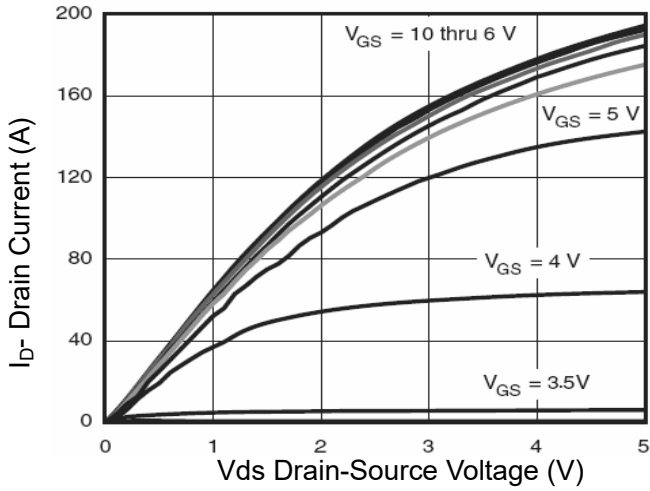


Figure 1 Output Characteristics

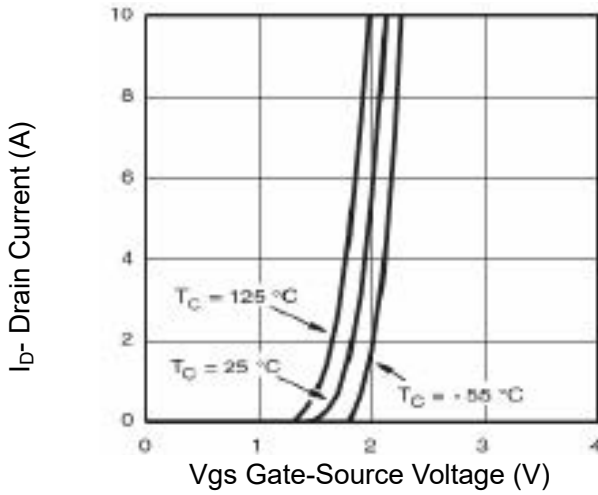


Figure 2 Transfer Characteristics

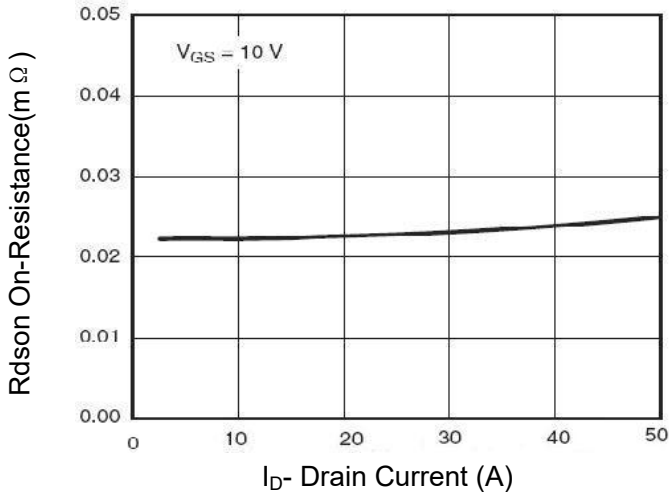


Figure 3 Rdson- Drain Current

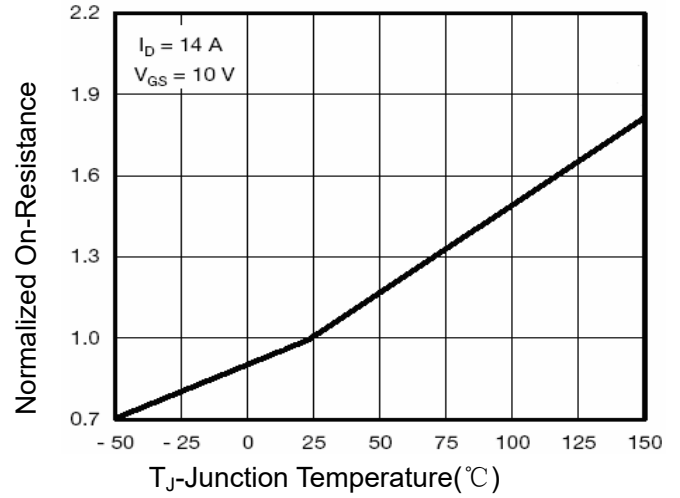


Figure 4 Rdson-Junction Temperature

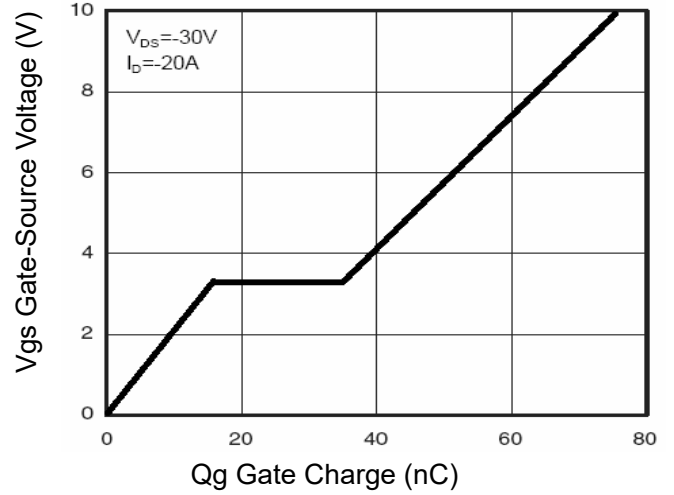


Figure 5 Gate Charge

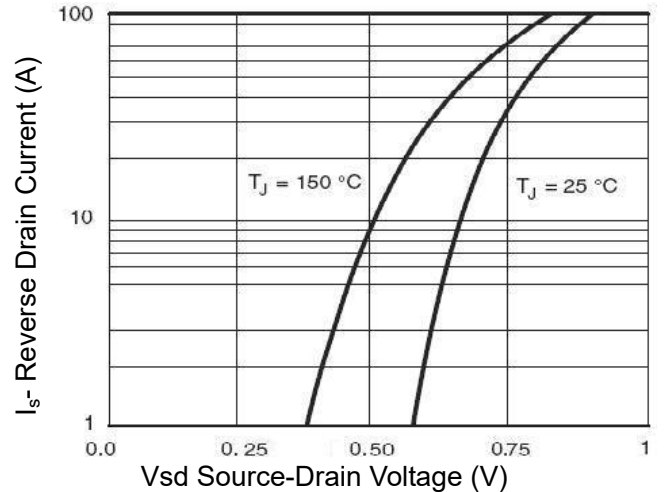
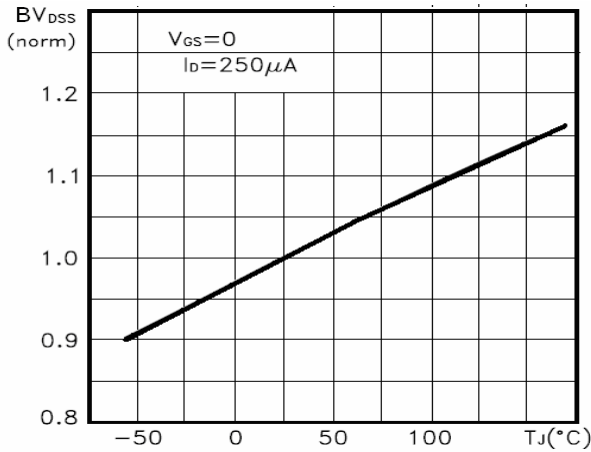
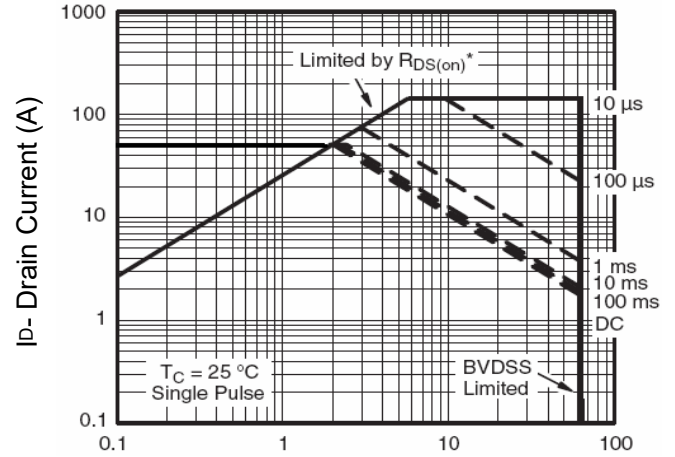


Figure 6 Source- Drain Diode Forward



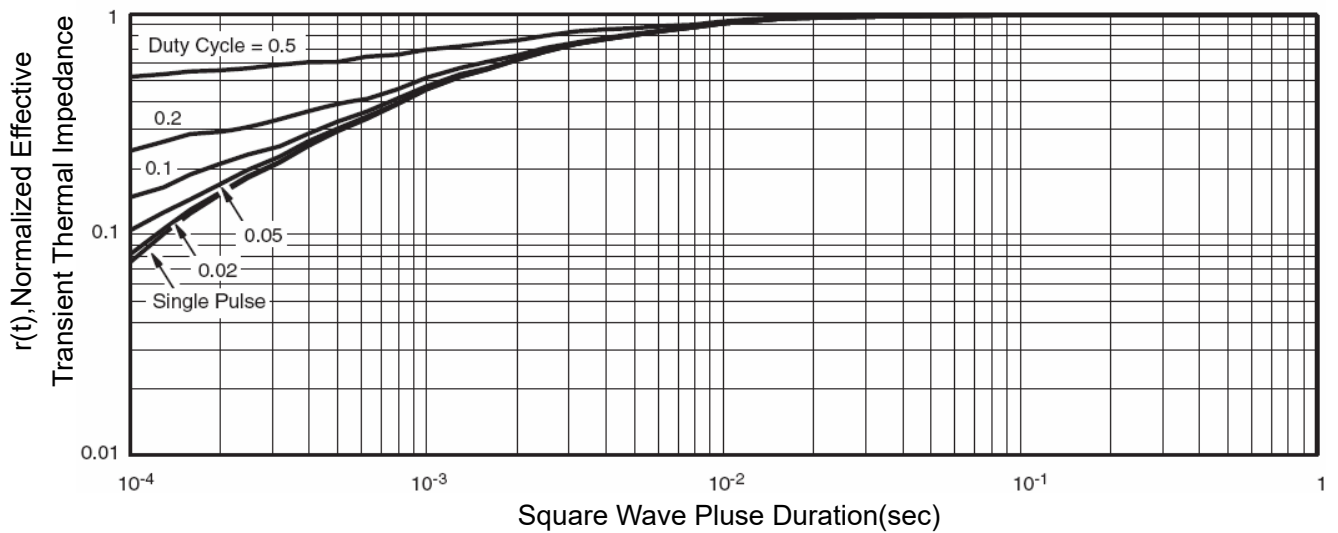
$T_J$ -Junction Temperature(°C)

**Figure 9  $BV_{DSS}$  vs Junction Temperature**



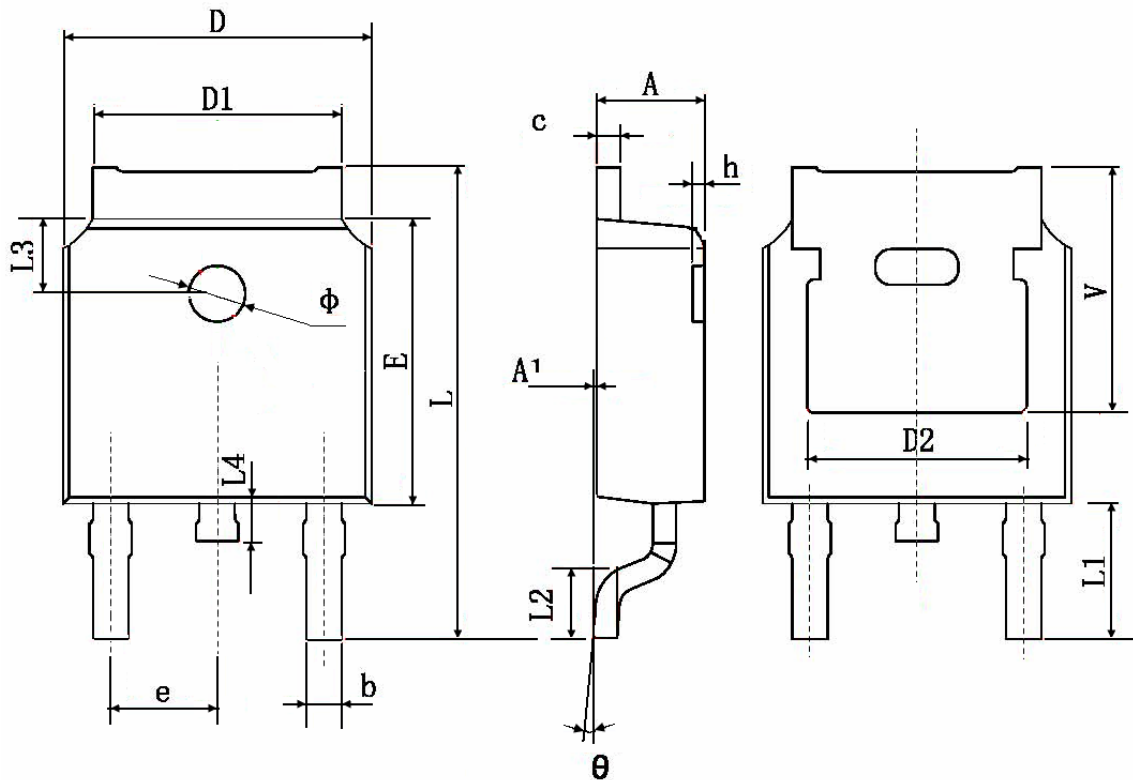
$V_{DS}$  Drain-Source Voltage (V)

**Figure 8 Safe Operation Area**



**Figure 11 Normalized Maximum Transient Thermal Impedance**

TO-252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	0.483 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 TYP.		0.211 TYP.	